

Volume II

Appendix O

Blue Flint Ethanol Plant Lateral Aquatic Resource Delineation Report

**BLUE FLINT ETHANOL PLANT LATERAL
Aquatic Resource Delineation Report**



*Prepared For:
WBI Energy Transmission, Inc.*



Beaver Creek
ENVIRONMENTAL

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Executive Summary

WBI Energy Transmission, Inc. (WBI) are proposing construction of approximately 10 miles of 8-inch lateral pipeline from its existing Line Section 7 main line to Midwest AgEnergy's Blue Flint ethanol plant. The purpose of the project is to provide natural gas service to the ethanol plant so it can convert from coal to natural gas power generation.

WBI contracted Beaver Creek, Inc. to conduct an aquatic resources inventory for the Project. Luke Toso and Aidan Goblirsch, conducted the aquatic resource delineation according to standards set forth in the *US Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual*, the *2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region*, and the *2008 Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the United States*. A summary of the delineation is as follows:

- The total survey area was 463 acres, centered at 47.371019, -101.052425.
- Field surveys revealed 18 aquatic resources (delineated in 25 parts) in the survey area. Most of these features were isolated prairie pothole wetlands within agricultural fields.
- Upland observations were made in 14 areas. These areas were investigated since they appeared to be potential wetlands based on the desktop assessment, but the field investigations showed these areas to be upland.

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Chapter 1. Introduction

WBI Energy Transmission, Inc. (WBI) is proposing to construct approximately 10 miles of 8-inch lateral pipeline from its existing Line Section 7 main line to Midwest AgEnergy's Blue Flint ethanol plant. The purpose of the project is to provide natural gas service to the ethanol plant so it can convert from coal to natural gas power generation. The Project is defined as the construction and operation of the proposed pipeline, and the Project area is defined as the area needed to construct the Project. The Project would be under the jurisdiction of the Federal Energy Regulatory Commission (FERC).

WBI contracted Beaver Creek, Inc. to conduct an aquatic resources inventory for the Project. The survey area is defined as the 463-acres where construction activities are planned. The purpose of this report is to identify and describe aquatic resources and to identify known possible sensitive plant, fish, wildlife species, and cultural/historic properties in the survey area. This report facilitates efforts to:

1. Avoid or minimize impacts to aquatic resources during the design process.
2. Document aquatic resource boundary determinations for review by regulatory authorities.
3. Provide early indications of known sensitive species and historic/cultural properties within the survey area.
4. Provide background information.
5. Avoid or minimize impacts to aquatic resources during the design process.
6. Document aquatic resource boundary determinations for review by regulatory authorities.
7. Provide early indications of known sensitive species and historic/cultural properties within the survey area.

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Chapter 2. Location

The Project is in McLean County, North Dakota approximately 8 miles north of Washburn, North Dakota. Directions to the survey areas are provided in Appendix B. The project is centered 47.371019, -101.052425 and the survey area is in the following sections:

- Portions of Section 16, 19, 20, 21, 22, 23 Township 145 North, Range 81 West.
- Portions of Section 14, 13, 15, 17, 18, 20, 21, 22, 23, 24 Township 145 North, Range 82 West.

Chapter 3. Methods

Prior to field surveys, a desktop assessment was conducted to evaluate potential wetland sites in the survey area. Aerial images and US Geological Survey (USGS) topographic maps were evaluated to determine land use and topographic relief. The USGS topographic maps used were Washburn SW, Washburn, and Turtle Creek SW 7.5" quadrangles. The National Wetland Inventory (NWI) and soil survey maps were also used to determine if wetlands may be present.

The aquatic resource field delineation was conducted on May 5, May 6, and August 6, 2021 by Luke Toso and Aidan Goblirsch according to routine on-site methodology in the 1987 US Army Corps of Engineers *Wetland Delineation Manual*, the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region*, and the 2008 *Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the United States*. Delineations were conducted by evaluating potential wetlands through investigating vegetation, soils, and hydrology indicators at paired upland and wetland transect points. Potential streams or other waters were determined by evaluating the ordinary high-water mark (OHWM). Areas that appeared to be wetlands or drainageways on aerial images were also documented to show actual field conditions.

Vegetation was identified and quantified at each transect point. Wetland indicator status was assigned to each species according to the *National Wetland Plants List, Great Plains Region* (Lichvar 2016). Plant scientific names are used according to the US Department of Agriculture, Natural Resources Conservation Service (NRCS) Plants Database (USDA, NRCS 2020). Hydrophytic wetland vegetation criteria are met when 50% or more of the dominant species within each vegetation strata were obligate (OBL), facultative wet (FACW) or facultative (FAC) wetland status. Percent cover was estimated using previous years growth material.

Hydric soils were determined by using the NRCS *Field Indicators of Hydric Soils in the United States, Version 8.2* (NRCS 2018). Soils were evaluated by excavating soil pits at each sample point. The depth of each pit varied depending if hydric soil indicators were present.

Wetland hydrology was determined through observation of primary or secondary indicators. A single primary indicator (e.g. surface water) or two secondary indicators (e.g. soil surface cracks or geomorphic position) are needed to conclude that wetland hydrology is present. Due to drought conditions throughout the project area, hydrology indicators were carefully evaluated to ensure aquatic resources were accurately delineated.

Streams or other waters (i.e. ditches) were delineated differently than wetlands by mapping the OHWM. The OHWM is defined as “[T]he line on the shore established by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area” (84 FR 4154).

Chapter 4. Existing Conditions

4.1 Landscape Setting

At the landscape scale, the survey area is within the Missouri Plateau ecoregion of North Dakota (Bryce et al. 1996). This landscape contains gently rolling to flat topography with prairie pothole wetland depressions with few integrated stream systems. Most waterways in this ecoregion flow into the Missouri River via streams flowing generally west or south. The Project is within the Painted Woods-Square Butte watershed (Hydrologic Unit Code [HUC] 10130101), the Coal Lake Coulee-Missouri River subbasin (HUC 1011020506), and two subwatersheds: the Buffalo Creek (HUC 101301010703) and Weller Slough-Coal Lake Coulee (HUC 101301010701).

Most of the Project was surveyed on May 5 and 6, 2021, with follow up surveys conducted on August 6, 2021. While the first surveys were conducted early in the growing season, it was still possible to precisely identify and quantify the percent cover of vegetation within wetlands using past seasons material, if natural vegetation was present. If natural vegetation was not present due to agricultural activities, changes in soils and topography were used to map wetland boundaries.

Drought conditions were prevalent throughout this part of North Dakota, and water levels in wetlands appeared lower than typical for this time of year. Delineators used a conservative approach to delineate aquatic resources, by assuming a greater wetland boundary than field conditions indicated. Historic aerial images were also referenced to cross reference typical conditions.

The survey area is high in the landscape and used primarily for agricultural purposes. Some native habitats were present near the western portion of the survey area. Most precipitation falling in the survey area appears to pond in isolated wetland depressions or prairie potholes. However, two intermittent stream systems are present, one which eventually turns into Coal Creek Coulee (Wetland 13a,b,c) and another named Buffalo Creek (Wetland 6 and 7). Both flow south and are tributaries to the Missouri River.

4.2 Desktop Assessment

The desktop review showed numerous prairie pothole wetlands throughout the survey area. These pothole wetlands were shown primarily on aerial images and NWI maps. Two stream systems were shown on USGS Topographic Maps, one unnamed stream which turns into Coal Creek Coulee south of the survey area, and the other named stream Buffalo Creek. Soil maps indicated hydric soils in depression associated with some NWI wetlands.

4.3 Field Survey Results

Field surveys revealed 18 aquatic resources (delineated in 25 parts) in the survey area. The narrative description below divides these resources into six different categories. These categories were based on shared characteristics used to delineate similar features.

Another 14 areas were evaluated in the field because they appeared to be potential wetlands based on the desktop assessment. However, field investigations revealed these areas to be uplands. These upland observation points are divided into four categories based on shared characteristics.

4.4 Aquatic Resources

Wetland 1, 2, 3, 4, 8, 12, 14, 17 and 18: Prairie Pothole Wetlands

Most aquatic resources within the survey area were prairie pothole wetlands within agricultural crop fields. These features included Wetland 1, 2, 3, 4, 8, 12, 14, 17 and 18. All of these features appeared to be hydrologically isolated. Since natural vegetation was absent due to agricultural activities, these features were delineated by using hydric soil boundaries as they coincided with changes in topography. Typical soil profiles in wetlands were dark at the soil surface with redoximorphic concentrations, which met the Redox Dark Surface (F6) hydric soil indicator.

Some other wetlands contained thick topsoil horizons over depleted subsoil with redoximorphic concentrations, meeting either the Depleted Below Dark Surface (A11) or Thick Dark Surface (A12) hydric soil indicators. Typical wetland hydrology indicators were Geomorphic Position (D2) and Saturation Visible on Aerial Imagery (C9). These features do not appear to support aquatic wildlife that would support interstate or foreign commerce or support industries operating interstate or foreign commerce.

Wetland 5: Open Water Lake

Wetland 5 was an open water lake. This feature was delineated by walking the distinct bank between the lake and uplands dominated by smooth brome; hydrophytic vegetation was absent likely due to wave scour and erosion. Soils met the Loamy Gleyed Matrix (F2) hydric soil indicators. Wetland hydrology indicators included Surface Water (A1) of 12+ inches. This feature may support aquatic wildlife that would support interstate or foreign commerce or support industries operating interstate or foreign commerce.

Wetland 6 and 7: Vegetated Emergent Wetland Drainageways

Buffalo Creek, aka Wetlands 6 and 7, were vegetated emergent wetland drainageways. These features were delineated by mapping the boundary between upland vegetation, including smooth brome (*Bromus inermis*, UPL) and quackgrass (*Elymus repens*, FACU), and hydrophytic vegetation, including reed canary grass (*Phalaris arundinacea*, FACW) and cattail (*Typha latifolia*, OBL). Soils in the wetlands were dark at the soil surface with redoximorphic concentrations, which met the Redox Dark Surface (F6) hydric soil indicator. Wetland hydrology indicators were Surface Water (A1) with a depth of 6-12+ inches, Saturation (A3) with a depth of 0 inches, and a High Water Table (A2) at a depth of 6 inches. These features may support aquatic wildlife that would support interstate or foreign commerce or support industries operating interstate or foreign commerce.

Wetland 9: Unvegetated Wetland Drainageways

Wetland 9 appeared to be an unvegetated wetland drainageway, which may have been excavated to assist with drainage in an agricultural field. This feature was delineated by using hydric soil boundaries as they coincided with changes in topography, since natural vegetation was absent. Soils in the wetland were dark at the soil surface with redoximorphic concentrations which met the Redox Dark Surface (F6) hydric soil indicator. Wetland hydrology indicators were Surface Soil Cracks (B6) and Geomorphic Position (D2). This feature does not appear to support aquatic wildlife that would support interstate or foreign commerce or support industries operating interstate or foreign commerce.

Wetland 10: Isolated Ditch Wetland

Wetland 10 appeared to be an isolated ditch wetland. This feature was delineated by mapping the boundary between upland vegetation, including smooth brome (UPL), and hydrophytic vegetation, including reed canary grass (FACW) and prairie cordgrass (FACW). Wetland hydrology indicators that were met included Sparsely Vegetated Concave Surface (B8), Geomorphic Position (D2), and FAC-Neutral Test (D5). No soil pits were excavated at this wetland due to the presence of a railroad rock spoil, although soils are assumed to be hydric based on the presence of hydrophytic vegetation and wetland hydrology indicators. This feature does not appear to support aquatic wildlife that would support interstate or foreign commerce or support industries operating interstate or foreign commerce.

Wetland 11 (a, b, c, d), 13 (a, b, c), and 15: Vegetated Emergent Wetland Depressions

Wetlands 11 (a, b, c, d), 13 (a, b, c) and 15 appeared to be vegetated emergent wetland depressions. These features were delineated by mapping the boundary between upland vegetation, including western wheatgrass (*Pascopyrum smithii*, FACU), smooth brome (UPL), and quackgrass (FACU), and hydrophytic vegetation, including inland saltgrass (*Distichlis spicata*, FACW), prairie cordgrass (*Spartina pectinata*, FACW), and cattail (OBL). The majority of the soils in the wetlands were dark at the surface with redoximorphic concentrations which met the Redox Dark Surface (F6) hydric soil indicator. The other soils that were present in the wetlands met the Depleted Below Dark Surface (A11) hydric soil indicator. Typical wetland hydrology indicators included Salt Crust (B11), Saturation (A3) with a depth of 0 inches, Geomorphic Position (D2), and FAC-Neutral Test (D5). These features may support aquatic wildlife that would support interstate or foreign commerce or support industries operating interstate or foreign commerce.

Other Water 16a, b, c: Stormwater Ditches

Other Water 16 (a, b, c) were stormwater ditches present at the existing Blue Flint Ethanol Plant. They were mapped by walking the boundary between either bare ground or prairie cordgrass (FACW) and smooth brome (UPL). Soil pits were not excavated due to numerous buried utilities in the area. This feature appears to drain to the west. It does not appear to support aquatic wildlife that would support interstate or foreign commerce or support industries operating interstate or foreign commerce.

4.5 Upland Observation Points**Upland 1, 2, 3, 11: Upland Drainageways**

Uplands 1, 2, and 3 were within drainageways that appeared on aerial images to be stream channels. However, field investigation revealed upland conditions. If these features were vegetated (Upland 1, 3, 11), vegetation consisted mostly of smooth brome (UPL) or quackgrass (FACU). Soil indicators were often bright (10YR 4/3) under a dark topsoil layer, which does not meet hydric soil indicators. These features also lacked a distinct stream channel. Based on the dominance of upland vegetation or lack of hydric soil indicators, combined with the lack of a distinct channel, these areas were determined to be uplands.

Upland 4, 5, 6, 9, 10, 12, 13, and 14: Upland NWI Points

Uplands 4, 5, 6, 9, 10, 13, and 14 were shown as NWI polygons on the desktop assessment, but upon field observations, they were determined to be uplands. Soils were often too bright (10YR 4/3) to meet hydric soil indicators. These features often lacked the concave surface or general topographic relief needed to pond water. These areas were determined to be upland due to the lack of hydric soil indicators and lack of topographic relief needed to pond or transmit water.

Upland 8: Upland Depression

Upland 8 was within a depression that appeared saturated on aerial images. Soils were bright (10YR 5/3) and did not meet hydric soil indicators. It appeared that this area may have been ditched or drained. Since hydric soil indicators were absent, this area was assumed to be upland.

Upland 7: Historic Homestead

Upland 7 was a historic homestead with green ash (*Fraxinus pennsylvanica*, FACU) and box elder (*Acer negundo*, FAC) tree rows. Smooth brome (UPL) was dominant in the understory. An observation point was made here to confirm upland conditions.

Table 1. Wetland Table

Wetland Number	Test Hole (within wetland)	Location	LONG West (Dec. Deg.)	LAT North (Dec. Deg.)	Field Cowardin Classification	Wetland Type	Wetland Size (acres)	Wetland Feature
Wetland 1	1w	Sec.22, T145N, R81W	47.363984	-100.973978	PEM1C	Depression	0.076	Natural
Wetland 2	2w	Sec.22, T145N, R81W	47.367480	-100.983631	PEM1C	Depression	0.418	Natural
Wetland 3	3w	Sec.22, T145N, R81W	47.370999	-100.989829	PEM1C	Depression	0.254	Natural
Wetland 4	4w	Sec.21, T145N, R81W	47.371207	-101.002606	PEM1C	Depression	4.404	Natural
Wetland 5	5w	Sec.16, T145N, R81W	47.375207	-101.003295	L2ABG	Lake	0.144	Natural
Wetland 6	6w	Sec.19, T145N, R81W	47.371087	-101.050026	PEM1C	Drainageway	0.784	Natural
Wetland 7	7w	Sec.19, T145N, R81W	47.371005	-101.053139	PEM1C	Drainageway	0.309	Natural
Wetland 8	8w	Sec.24, T145N, R82W	47.371019	-101.061901	PEM1A	Depression	0.616	Natural
Wetland 9	9w	Sec.23, T145N, R82W	47.368862	-101.085029	PEM1A	Drainageway	0.249	Natural
Wetland 10	10w	Sec.23, T145N, R82W	47.369933	-101.096021	PEM1A	Ditch	0.064	Created
Wetland 11a	11w-1	Sec.23, T145N, R82W	47.370437	-101.097714	PEM1A	Depression	0.079	Natural
Wetland 11b	11w-1	Sec.23, T145N, R82W	47.370421	-101.098897	PEM1A	Depression	0.053	Natural
Wetland 11c	11w-2	Sec.23, T145N, R82W	47.369915	-101.099153	PEM1A	Depression	0.609	Natural
Wetland 11d	11w-3	Sec.22, T145N, R82W	47.370161	-101.100001	PEM1A	Depression	1.110	Natural
Wetland 12	12w	Sec.22, T145N, R82W	47.369728	-101.102127	PEM1C	Depression	0.113	Natural
Wetland 13a	13w-1	Sec.22, T145N, R82W	47.368431	-101.104950	PEM1C	Depression	2.178	Natural
Wetland 13b	13w-2	Sec.22, T145N, R82W	47.368361	-101.109428	PEM1C	Depression	4.977	Natural
Wetland 13c	13w-3	Sec.22, T145N, R82W	47.368156	-101.114800	PEM1C	Depression	4.067	Natural
Wetland 14	14w	Sec.21, T145N, R82W	47.369510	-101.131027	PEM1C	Depression	0.435	Natural
Wetland 15	15w	Sec.20, T145N, R82W	47.369676	-101.154466	PEM1A	Depression	0.189	Natural
Wetland 17	17w	Sec.21, T145N, R82W	47.368039	-101.130437	PEM1A	Depression	0.174	Natural
Wetland 18	18w	Sec.24, T145N, R8W	47.371101	-101.077711	PEM1C	Depression	0.65	
Upland 1	N/A	Sec.23, T145N, R81W	47.361939	-100.969692	N/A	N/A	-	Natural
Upland 2	N/A	Sec.22, T145N, R81W	47.365142	-100.977862	N/A	N/A	-	Natural
Upland 3	N/A	Sec.22, T145N, R81W	47.368942	-100.987477	N/A	N/A	-	Natural
Upland 4	N/A	Sec.21, T145N, R81W	47.370986	-101.005743	N/A	N/A	-	Natural
Upland 5	N/A	Sec.21, T145N, R81W	47.371047	-101.012408	N/A	N/A	-	Natural

Wetland Number	Test Hole (within wetland)	Location	LONG West (Dec. Deg.)	LAT North (Dec. Deg.)	Field Cowardin Classification	Wetland Type	Wetland Size (acres)	Wetland Feature
Upland 6	N/A	Sec.20, T145N, R81W	47.370637	-101.015489	N/A	N/A	-	Natural
Upland 7	N/A	Sec.20, T145N, R81W	47.371373	-101.023362	N/A	N/A	-	Natural
Upland 8	N/A	Sec.24, T145N, R82W	47.371243	-101.059661	N/A	N/A	-	Natural
Upland 9	N/A	Sec.23, T145N, R82W	47.369637	-101.082923	N/A	N/A	-	Natural
Upland 10	N/A	Sec.23, T145N, R82W	47.370192	-101.092361	N/A	N/A	-	Natural
Upland 11	N/A	Sec.17, T145N, R82W	47.372490	-101.150278	N/A	N/A	-	Natural
Upland 12	N/A	Sec.15, T145N, R82W	47.372680	-101.109461	N/A	N/A	-	Natural
Upland 13	N/A	Sec.14, T145N, R82W	47.380775	-101.078381	N/A	N/A	-	Natural
Upland 14	N/A	Sec.21, T145N, R82W	47.367948	-101.130490	N/A	N/A	-	Natural
Total							24.12	

Table 2. Other Water* Table

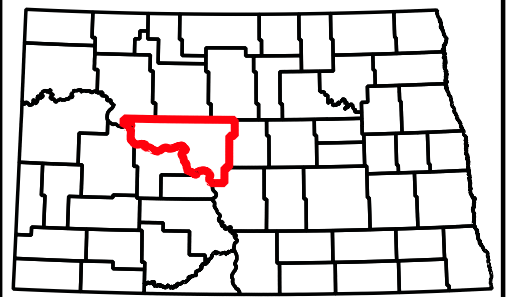
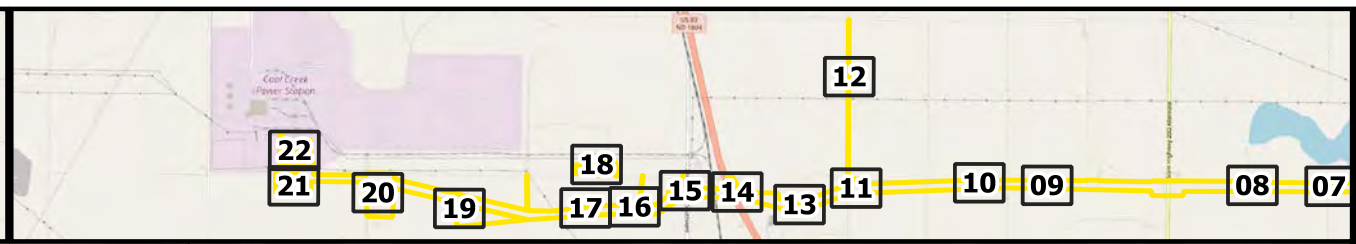
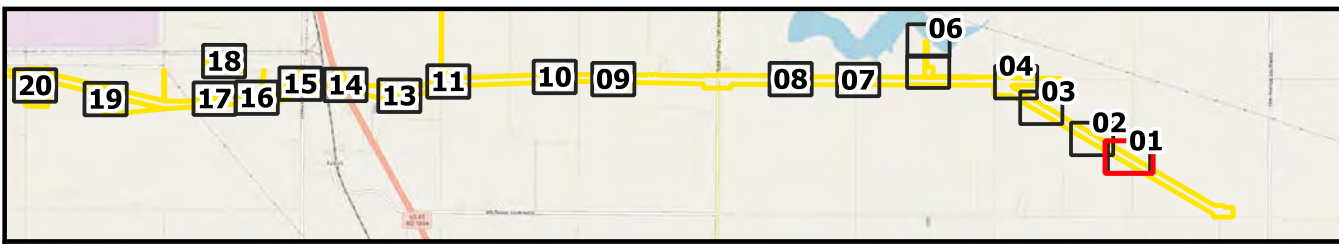
Number	Location	LONG West (Dec. Deg.)	LAT North (Dec. Deg.)	Local Waterway Name	Tributary To	Field or NWI Cowardin Classification	OW Size (acres)	OW Length (feet)	Other Water Type	Located in or Relocating a Natural Tributary
Other Water 16a	Sec.17, T145N, R82W	47.374001	-101.153805	N/A	N/A	R4SB	0.233	463.4	Stormwater Ditch	No
Other Water 16b	Sec.17, T145N, R82W	47.372665	-101.153758	N/A	N/A	R4SB	0.184	359.9	Stormwater Ditch	No
Other Water 16c	Sec.17, T145N, R82W	47.371926	-101.153819	N/A	N/A	R4SB	0.204	389.2	Stormwater Ditch	No
TOTALS							0.621	1212.5		

* Other Waters (OW) can include traditional navigable waters (named rivers, streams, and lakes); non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and deepwater habitat (greater than 2 meters) not dominated by persistent, emergent vegetation.

Chapter 5. References Cited

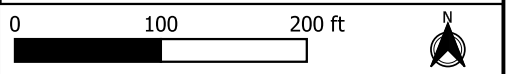
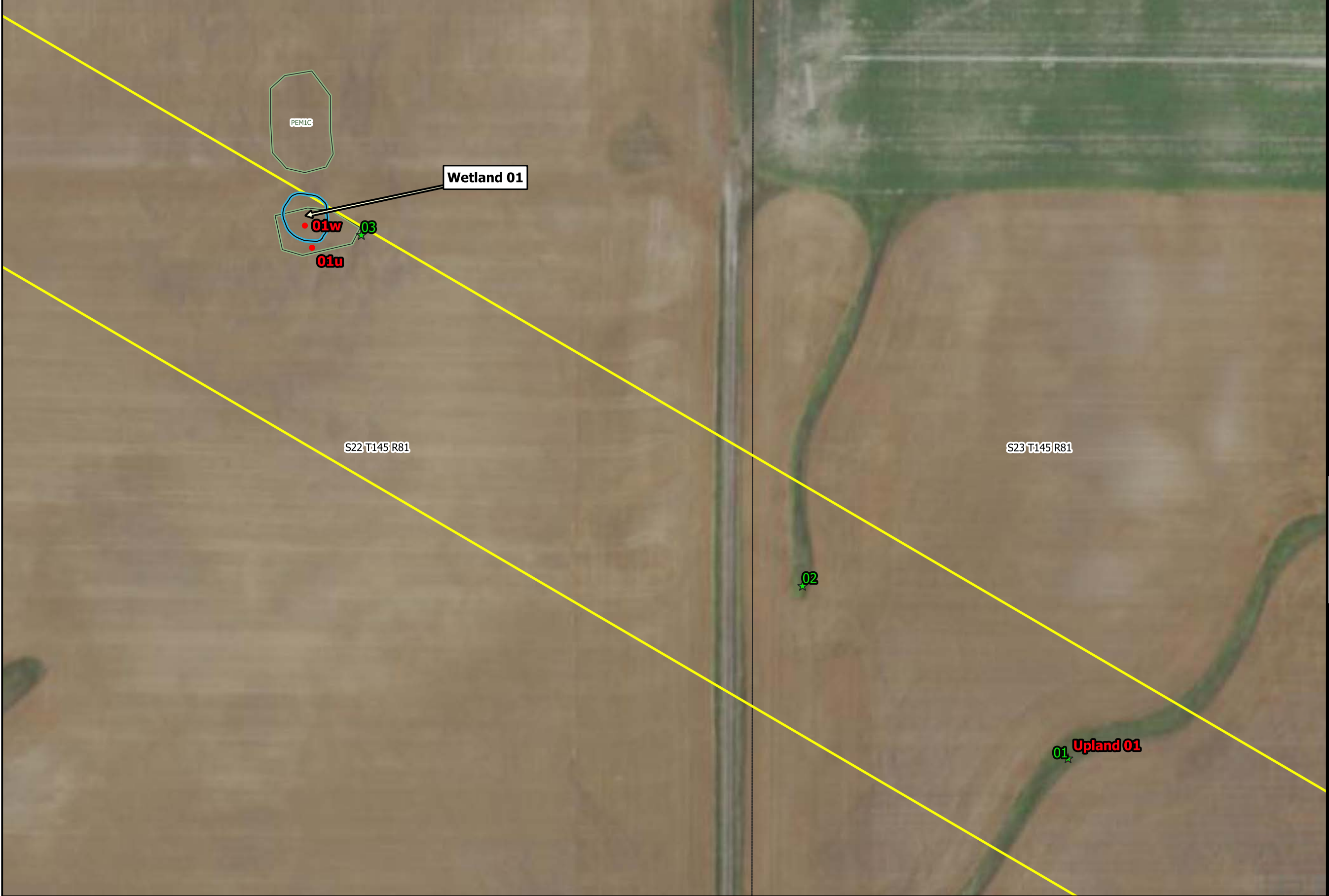
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Appendix A – Aquatic Resource Delineation Maps



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



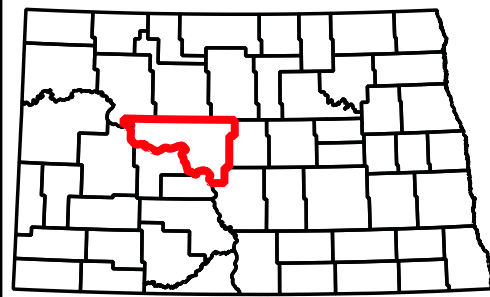
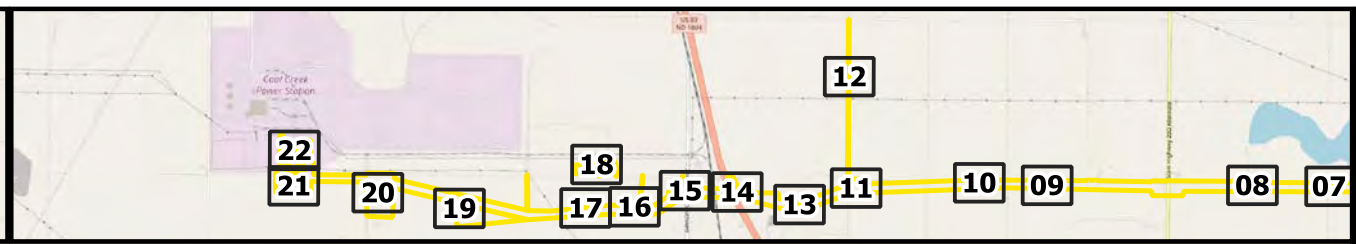
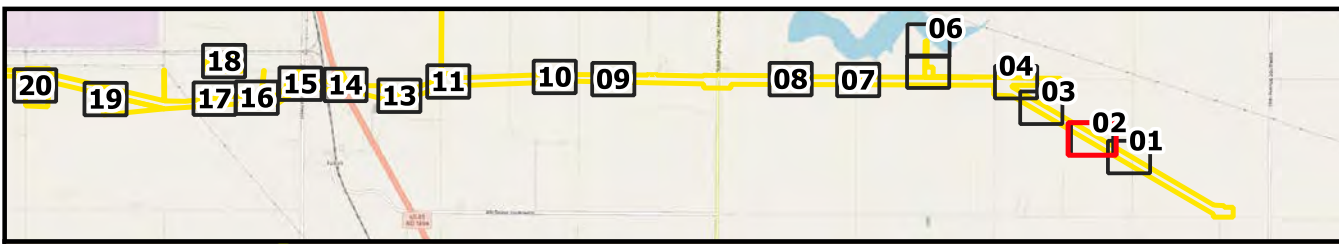
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 Drawn by: LToso
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 Map Date: 2021-08-13 10:34:42
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

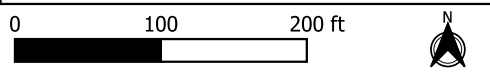
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 1 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



Surveyor: LToso, AGoblirsch
 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
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 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 2 of 22**

Wetland 01

01w

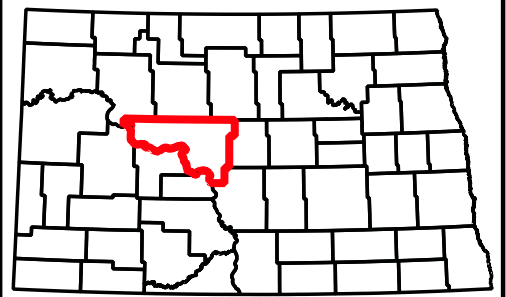
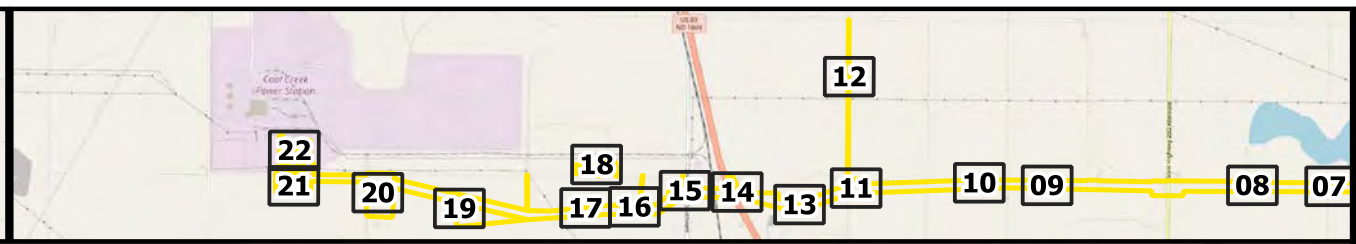
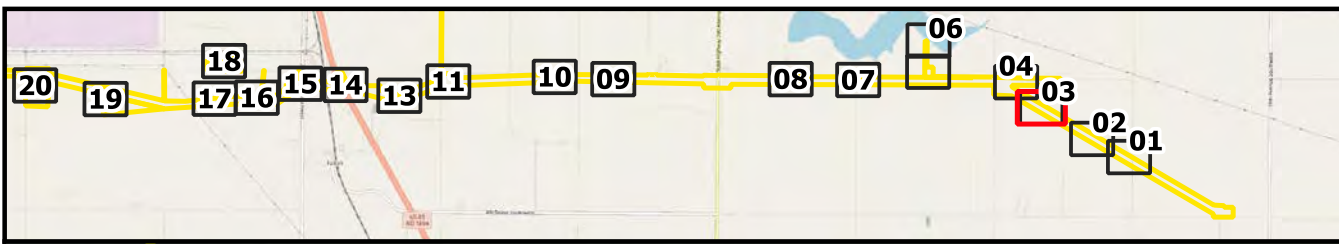
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PEMIC

PEMIC

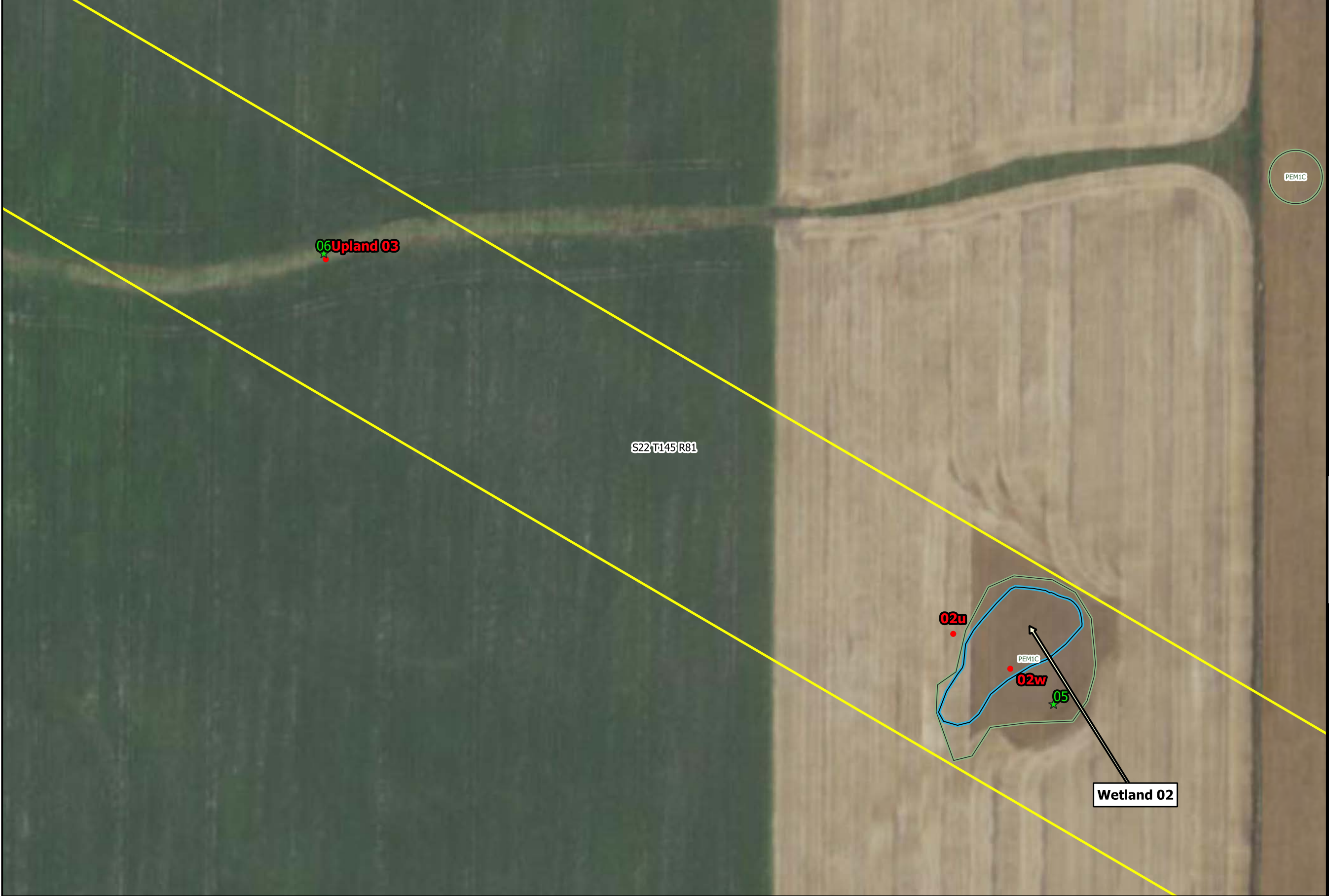
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S22 T145 R81

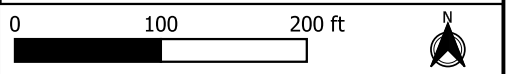


McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



S22 T145 R81



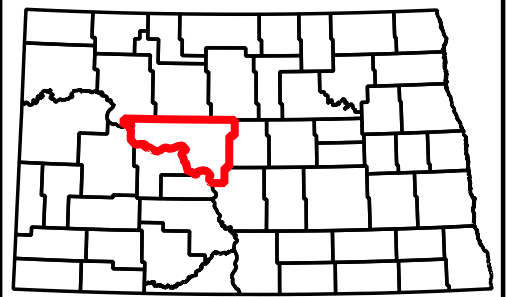
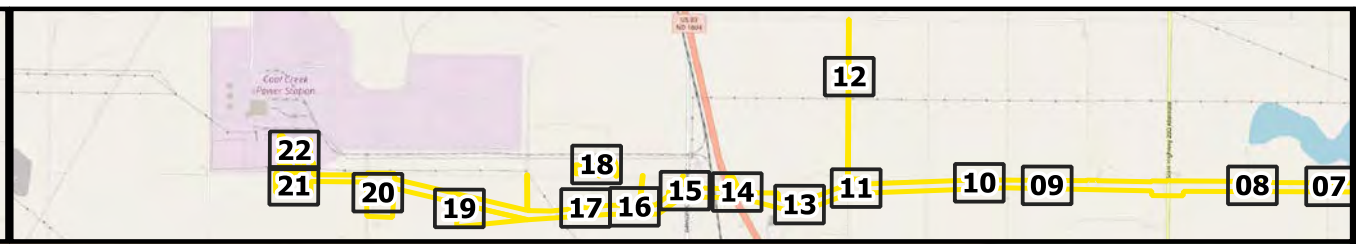
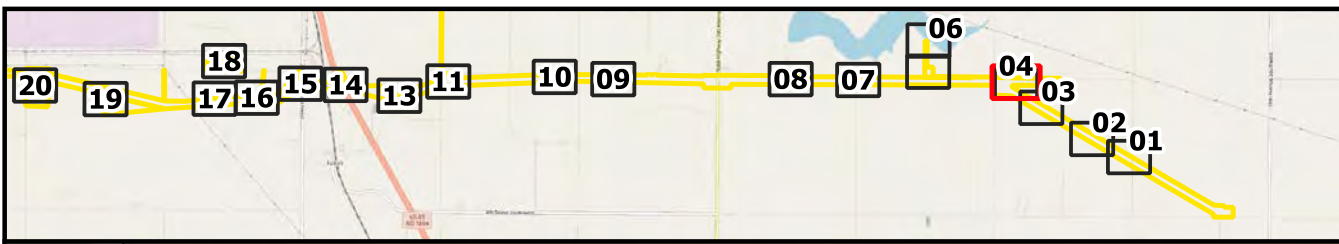
Surveyor: LToso, AGoblirsch
 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
 Map Date: 2021-08-13 10:35:11
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

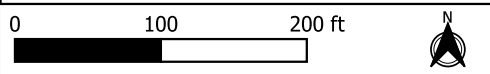
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 3 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



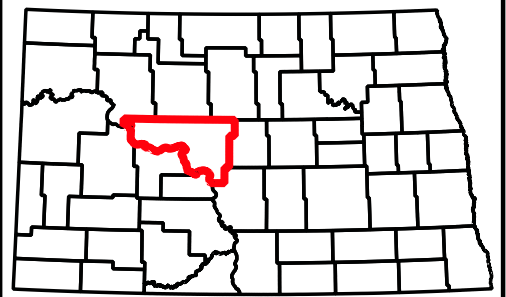
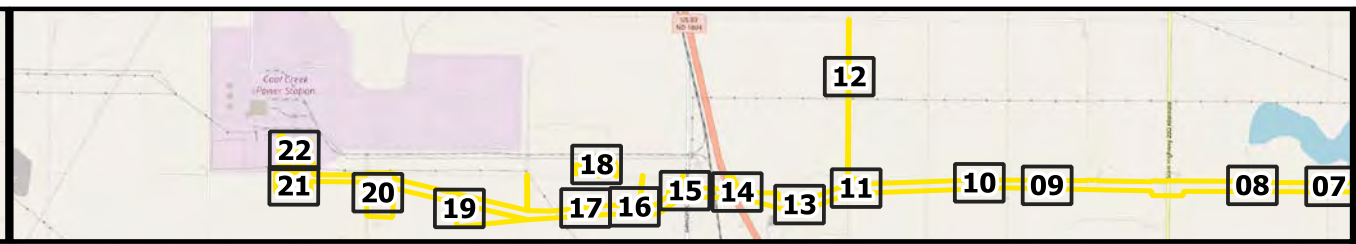
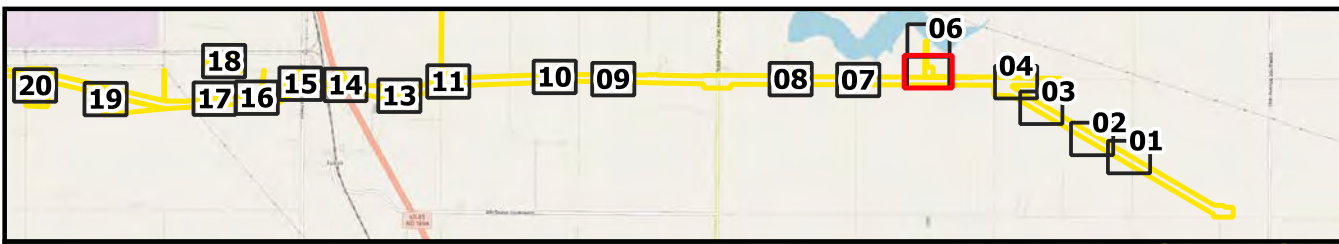
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 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
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 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

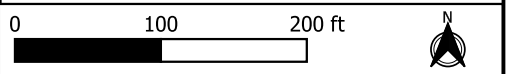
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 4 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



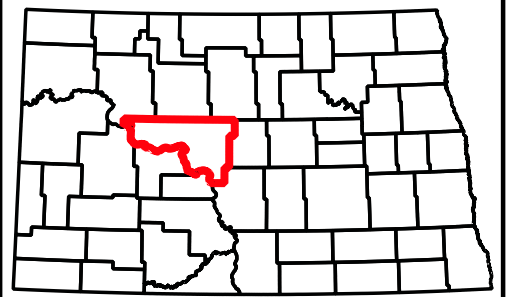
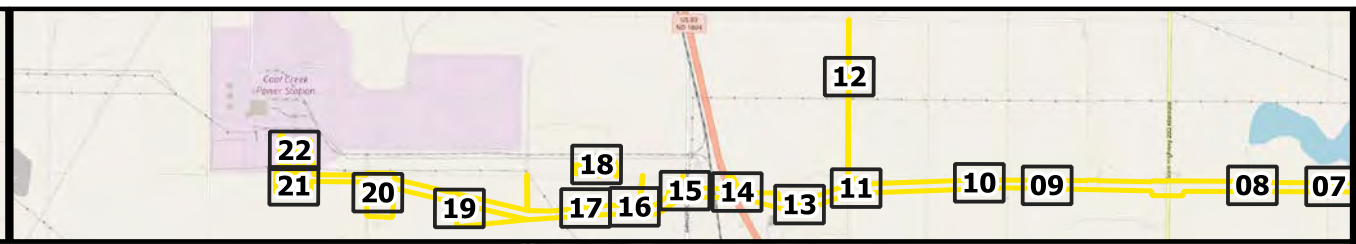
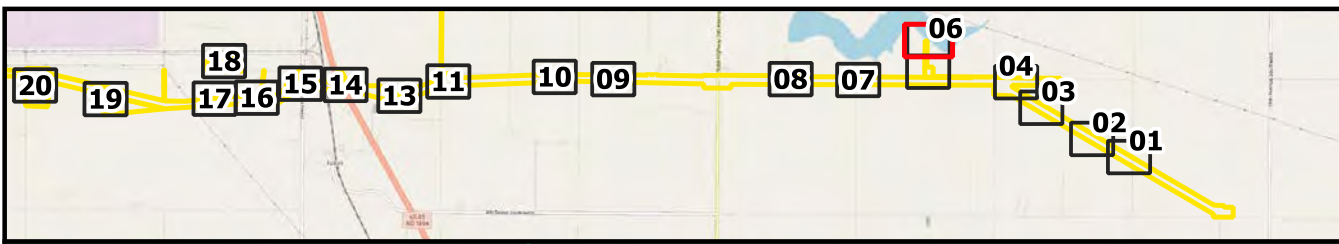
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 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
 Map Date: 2021-08-13 10:35:29
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

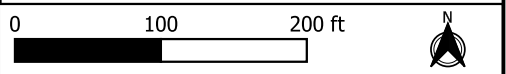
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 0 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



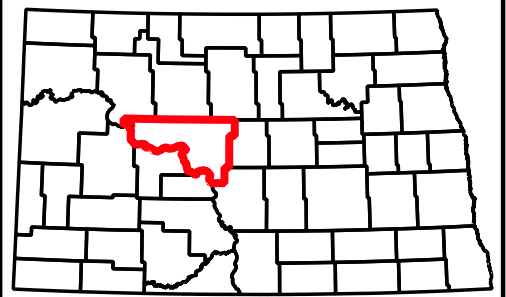
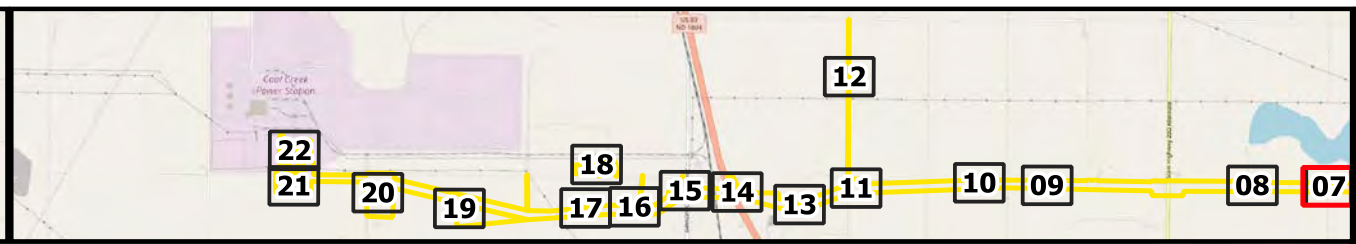
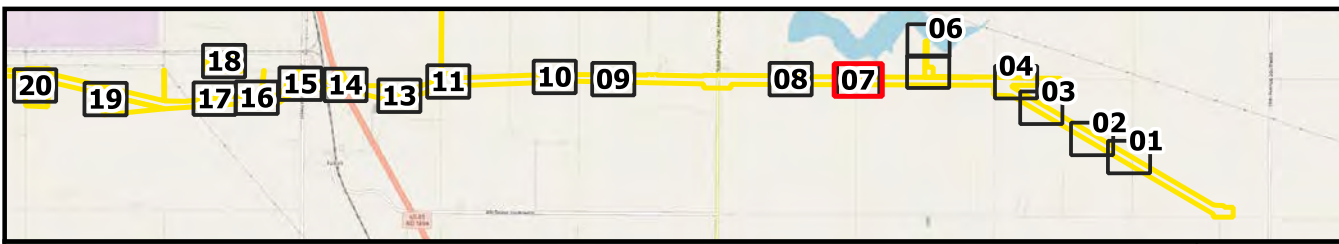
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 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
 Map Date: 2021-08-13 10:35:35
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

Blue Flint Ethanol Plant
Lateral
WBI Energy, Inc.

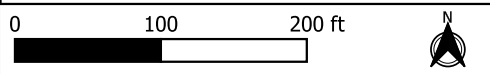
Exhibit 1
Map 6 of 22



McLean County, North Dakota



- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



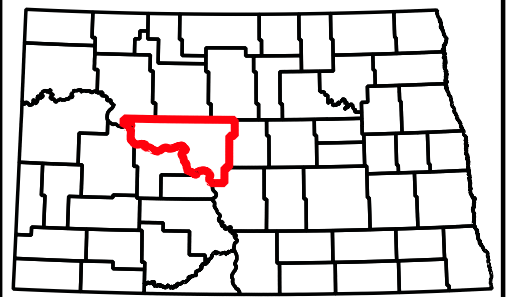
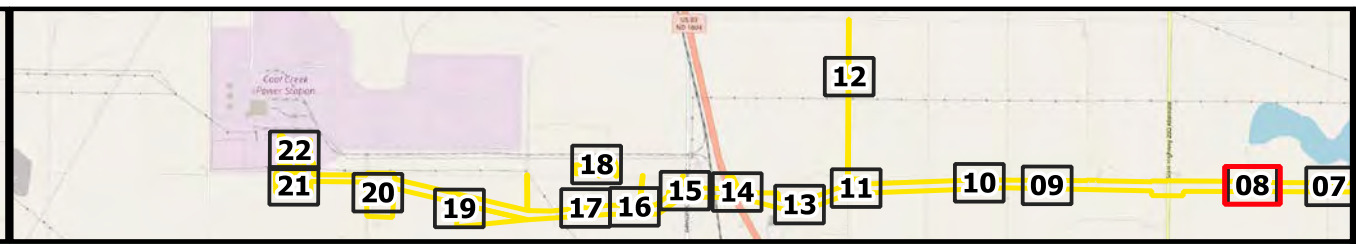
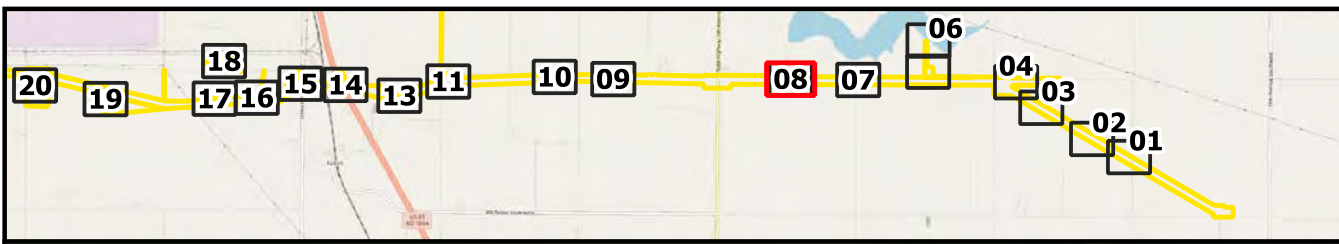
Surveyor: LToso, AGoblirsch
 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
 Map Date: 2021-08-13 10:35:41
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

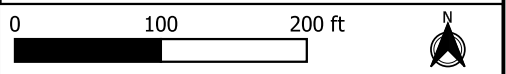
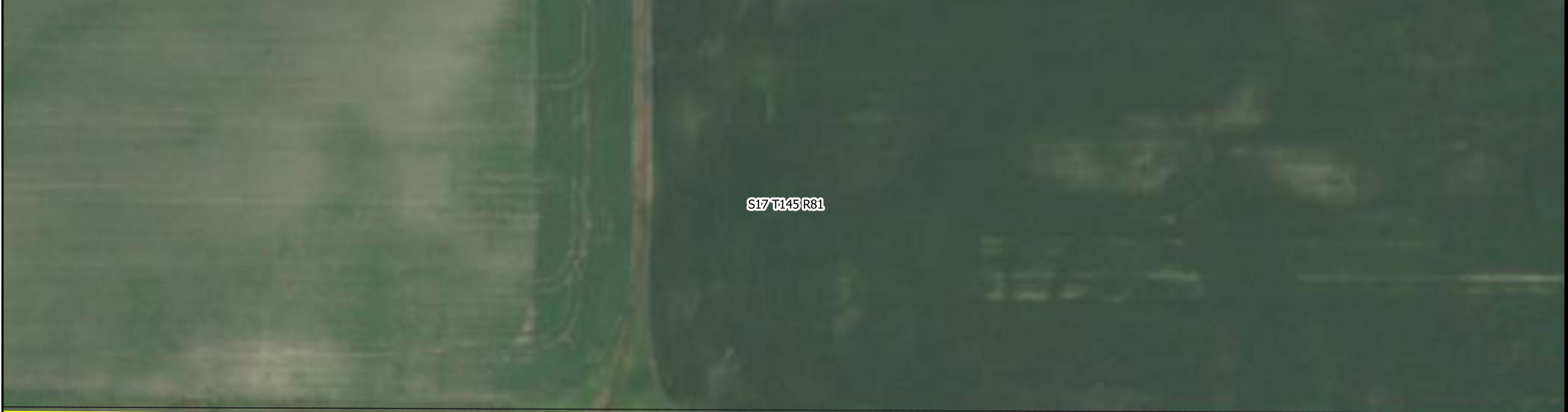
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 7 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



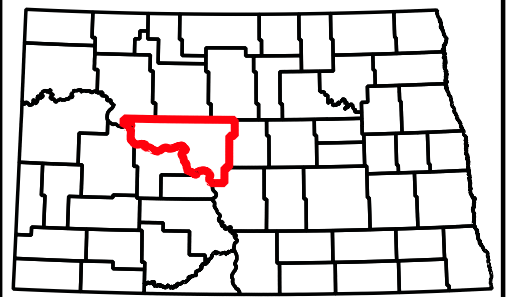
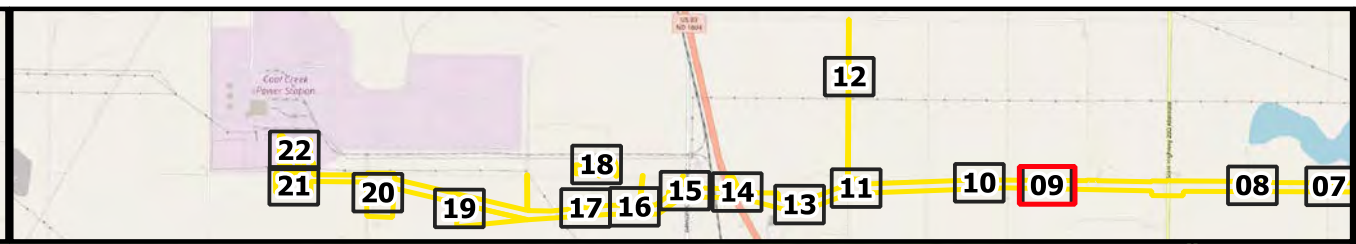
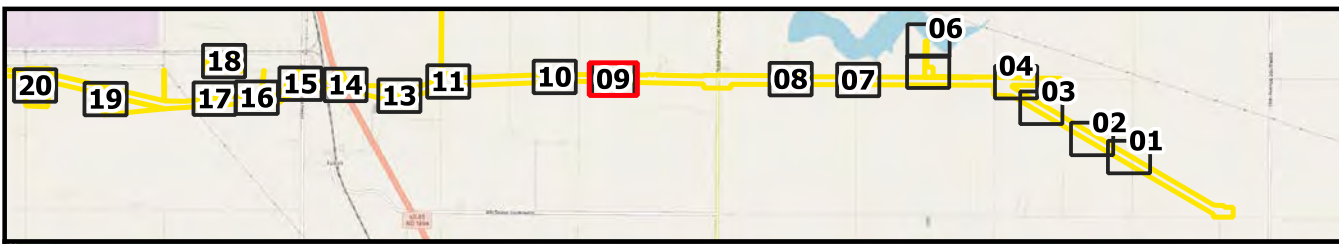
Surveyor: LToso, AGoblirsch
 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
 Map Date: 2021-08-13 10:35:47
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

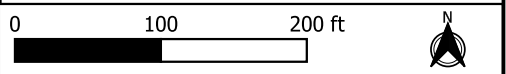
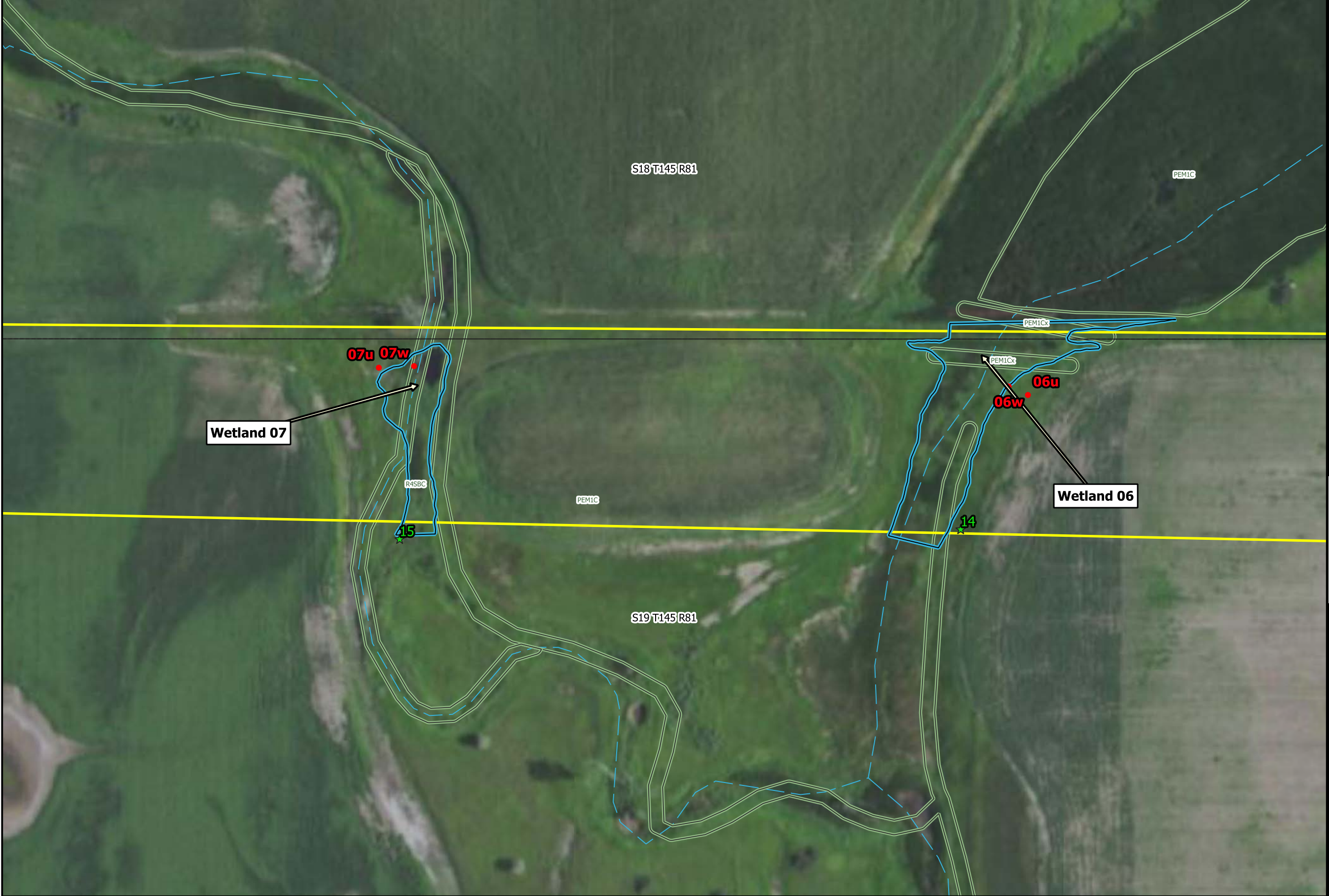
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 8 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



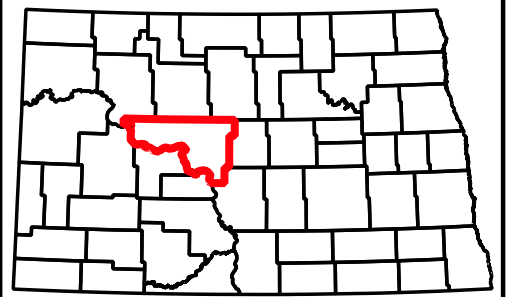
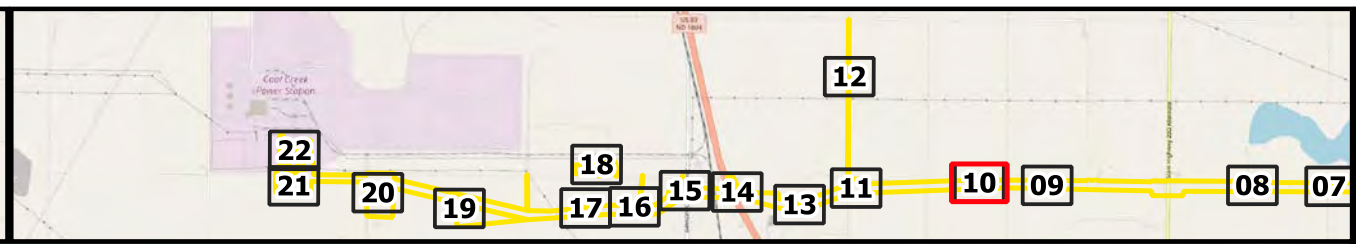
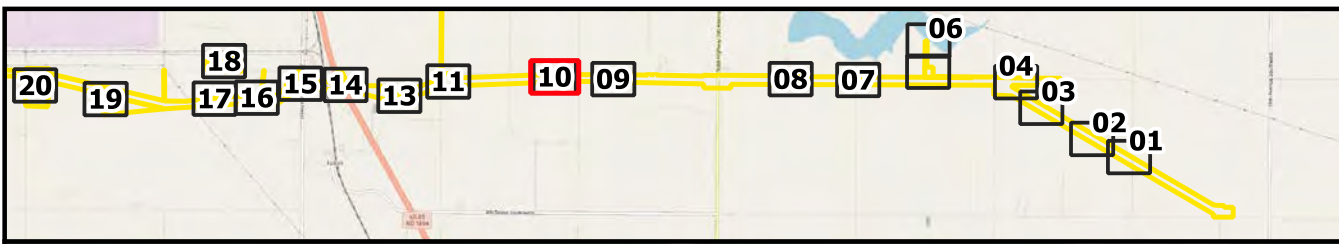
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 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
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 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

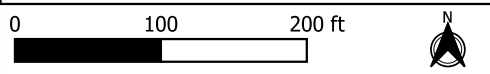
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 9 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



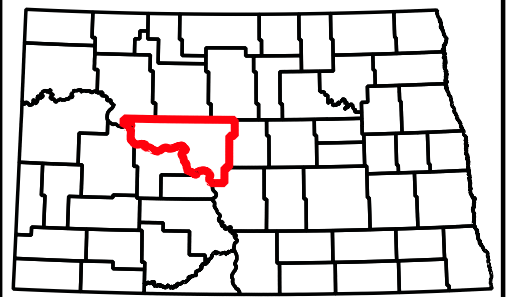
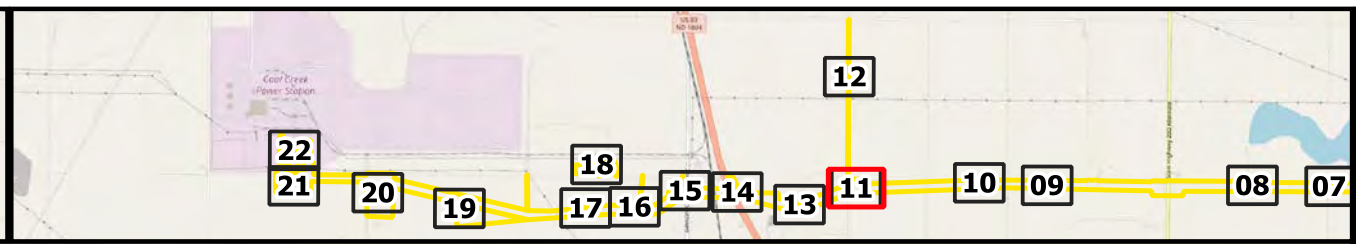
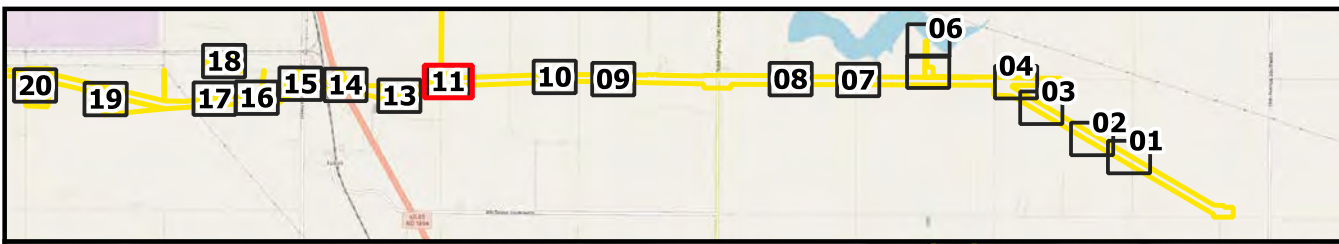
Surveyor: LToso, AGoblirsch
 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
 Map Date: 2021-08-13 10:35:59
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



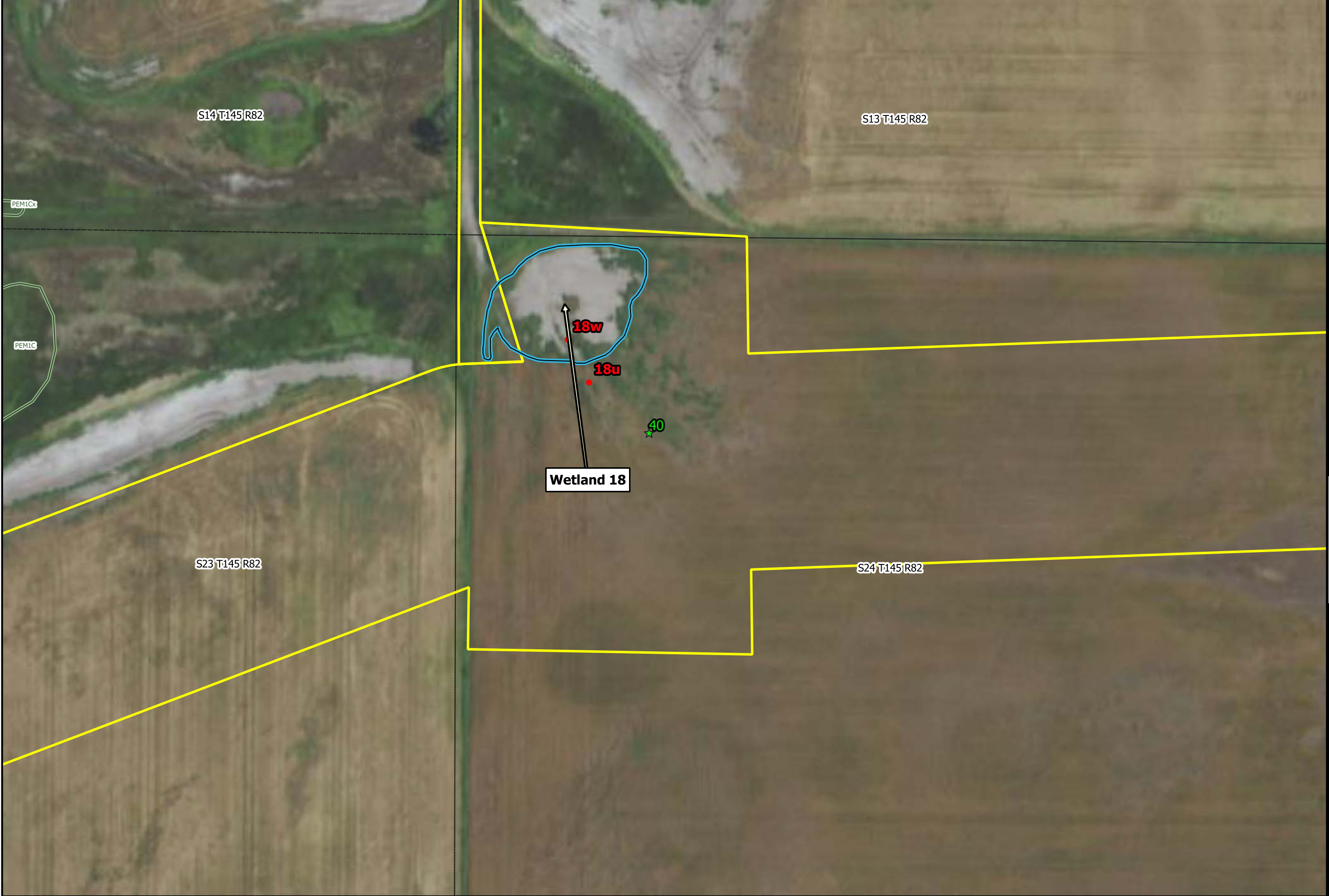
AQUATIC RESOURCES MAP

**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

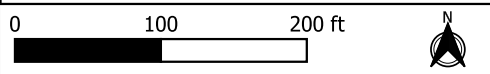
**Exhibit 1
 Map 10 of 22**



McLean County, North Dakota



- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



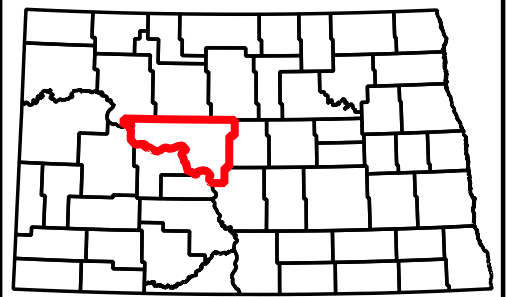
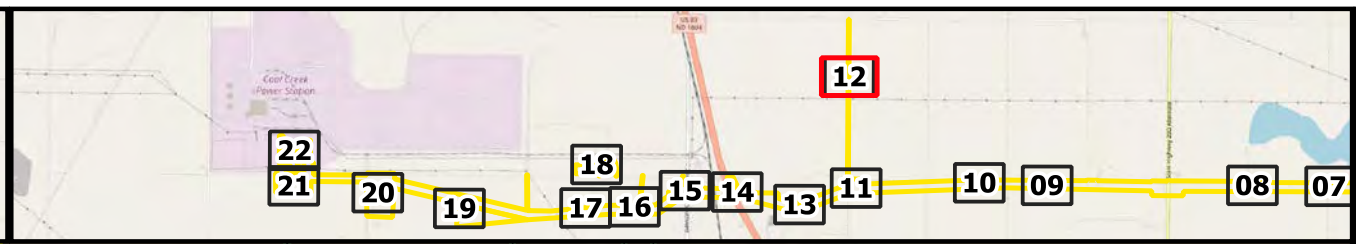
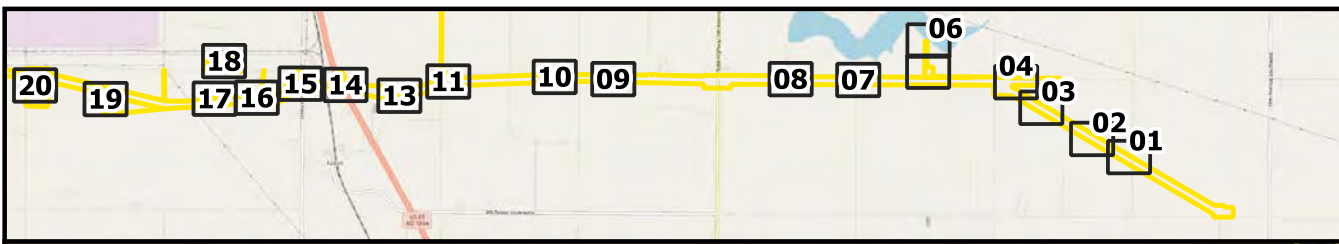
Surveyor: LToso, AGoblirsch
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 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
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 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

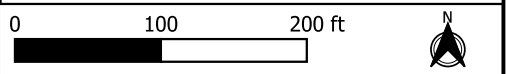
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 11 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



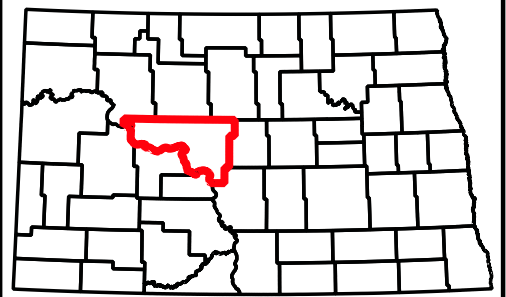
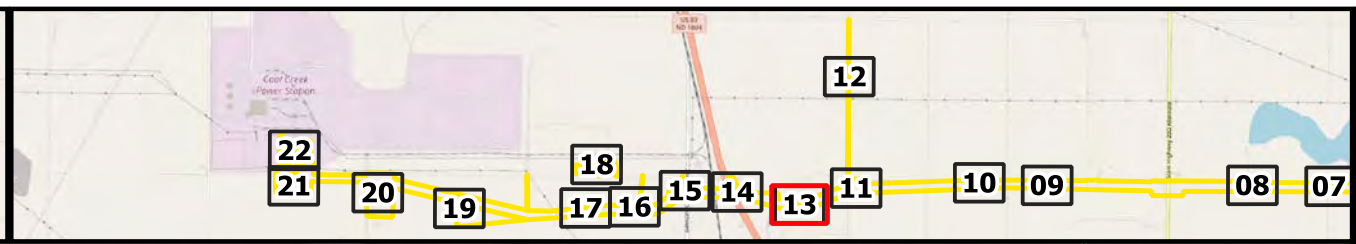
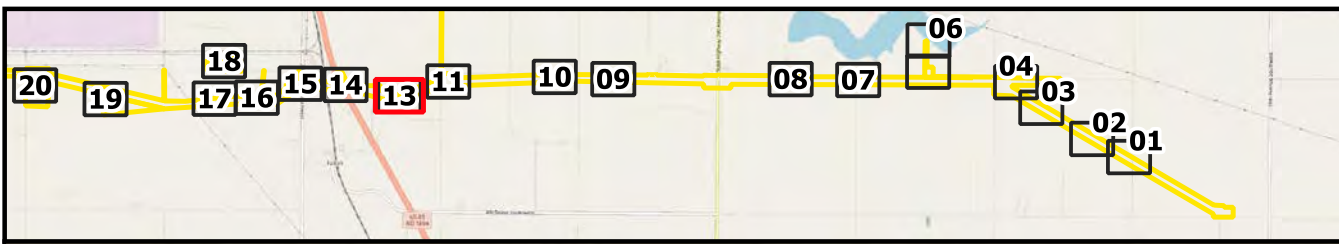
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 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

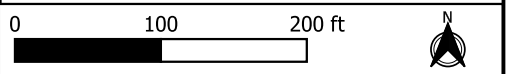
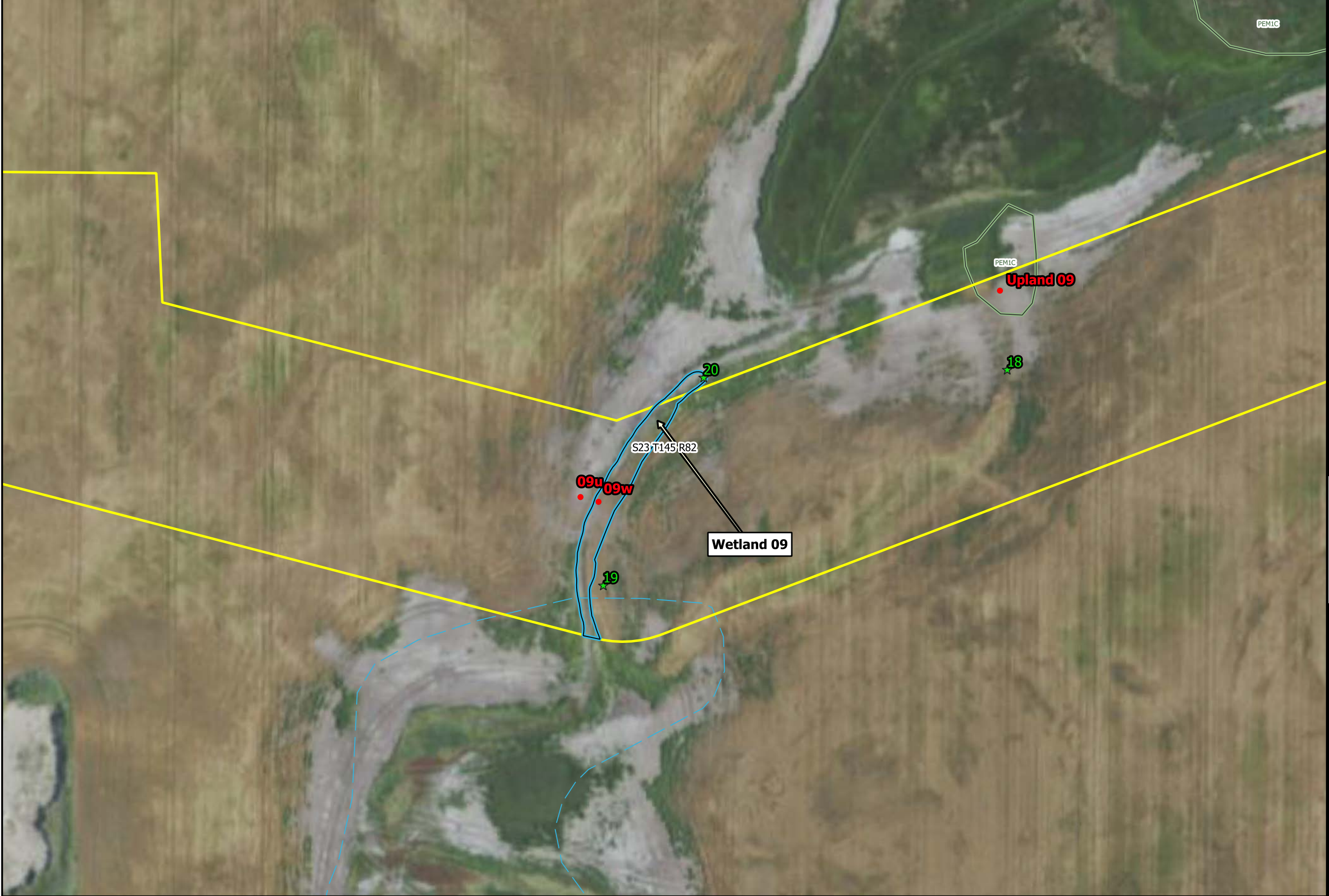
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 12 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



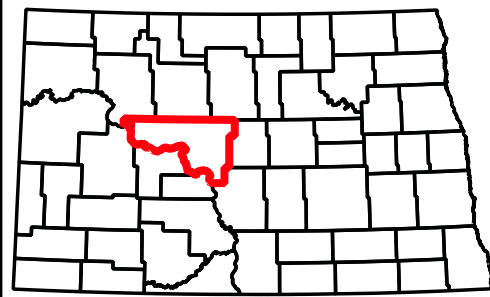
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 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
 Map Date: 2021-08-13 10:36:18
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

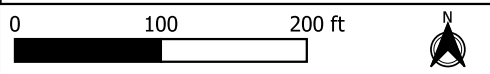
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 13 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



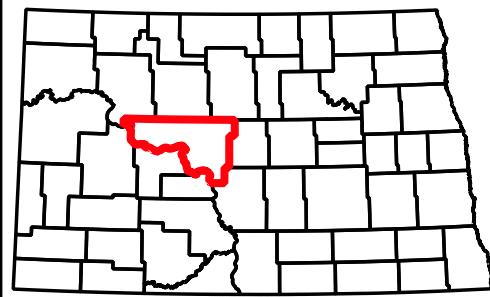
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 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

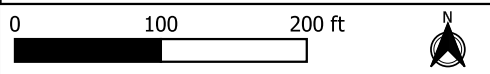
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 14 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



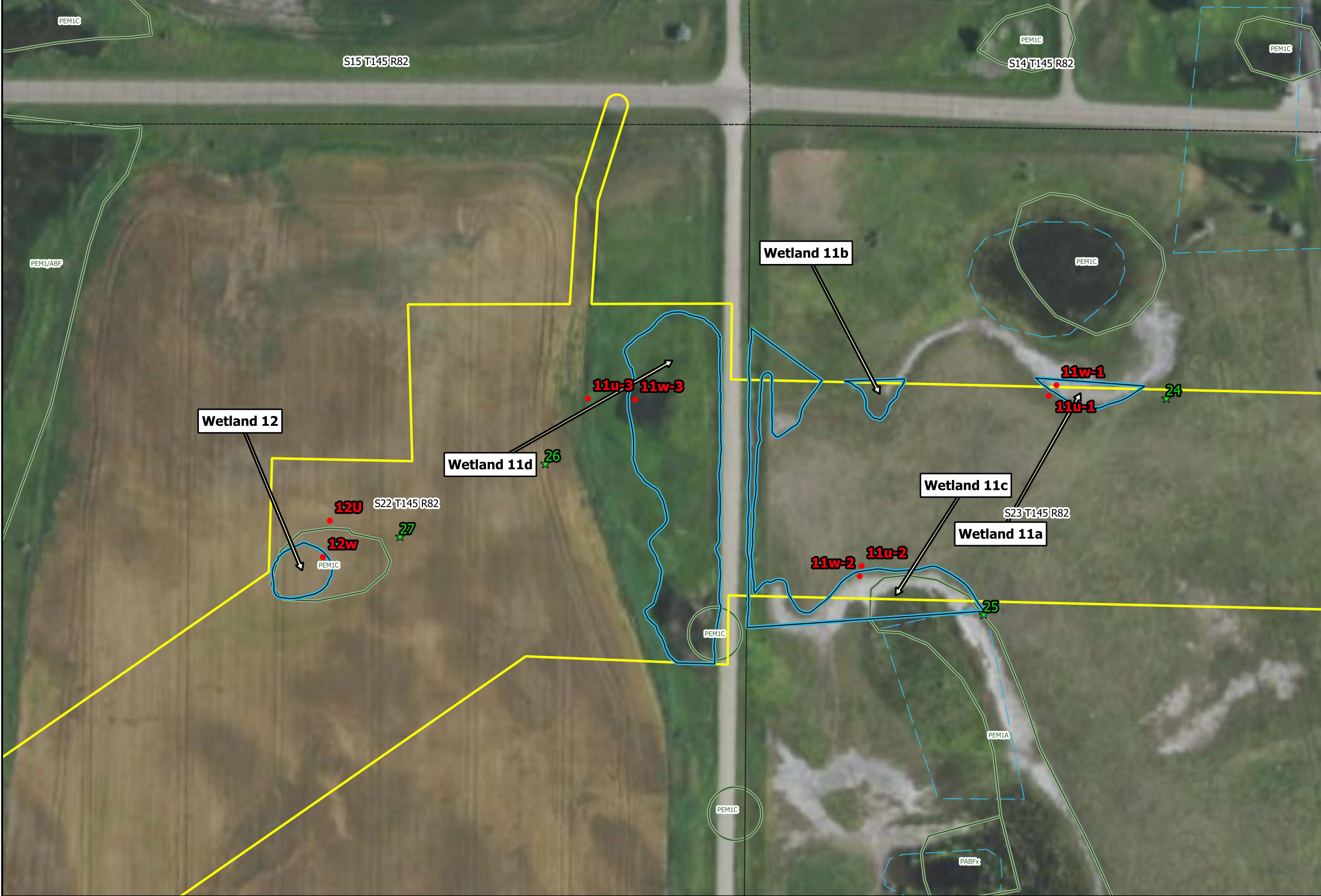
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 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)

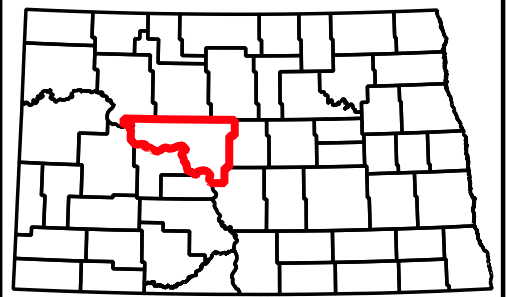
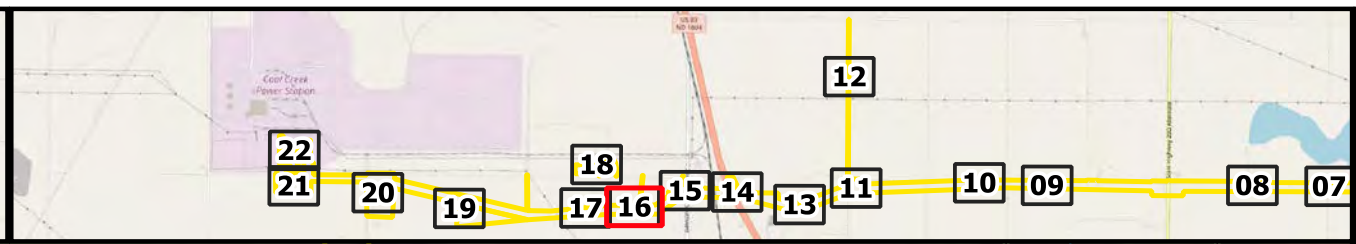
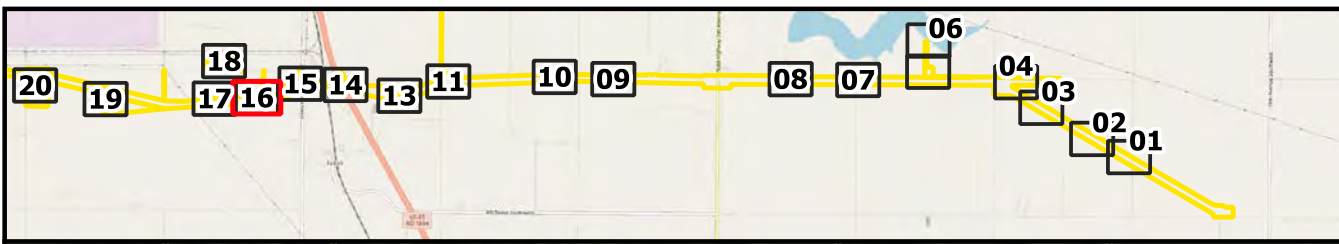


AQUATIC RESOURCES MAP

**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

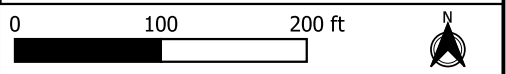
**Exhibit 1
 Map 15 of 22**





McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



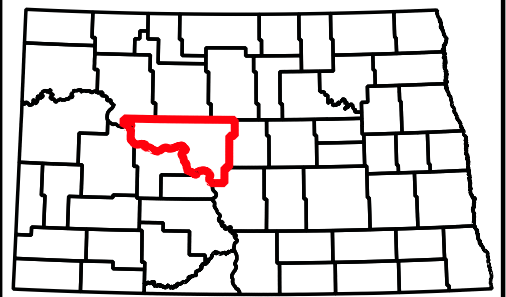
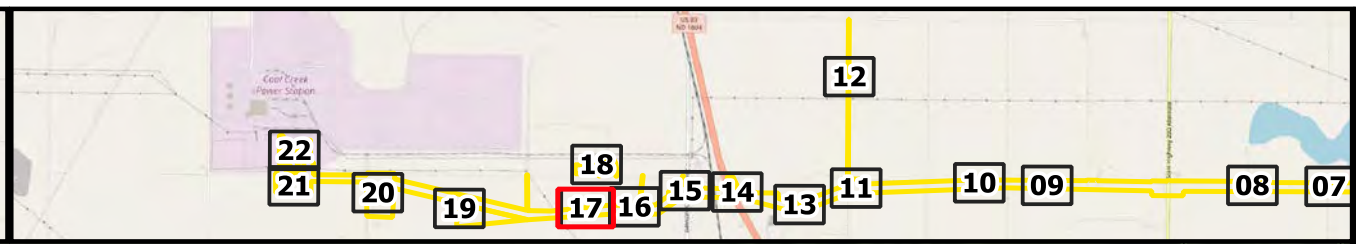
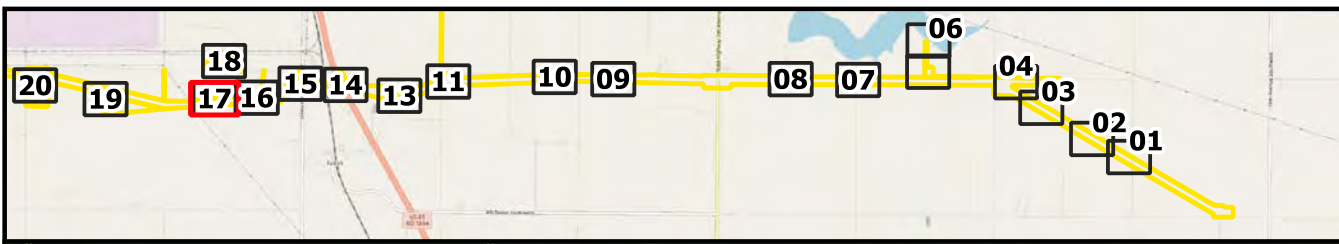
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 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

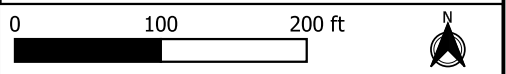
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 16 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



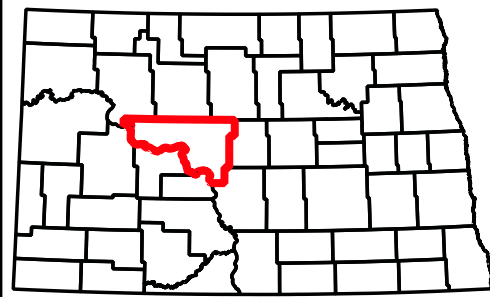
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 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
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 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

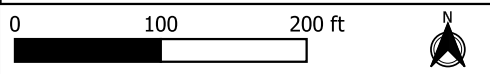
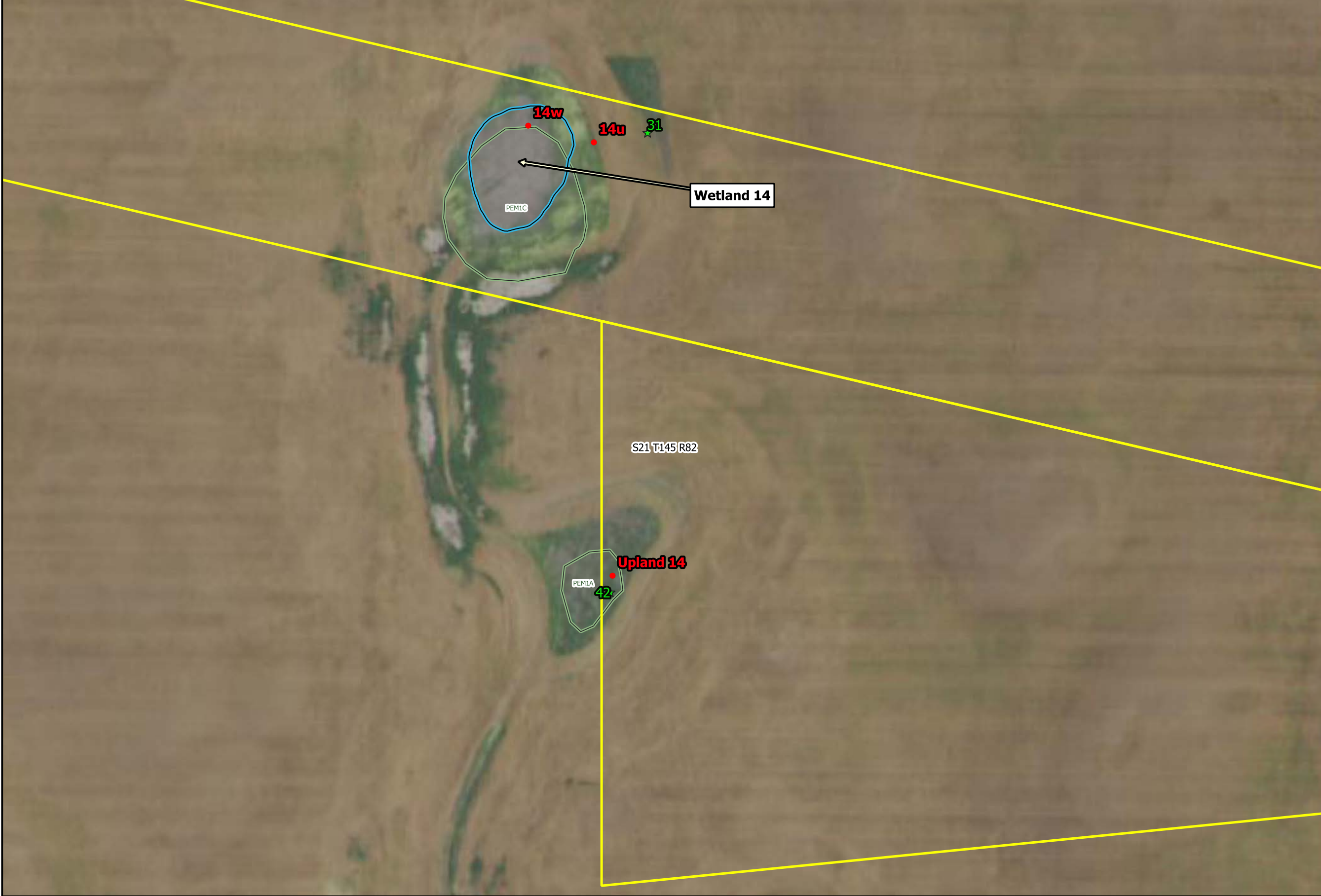
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 17 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



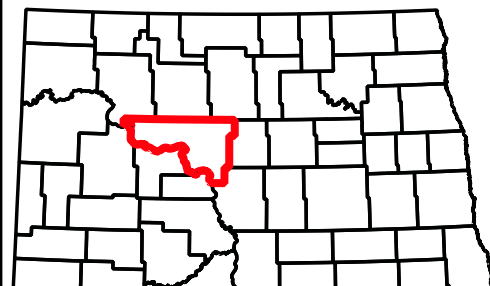
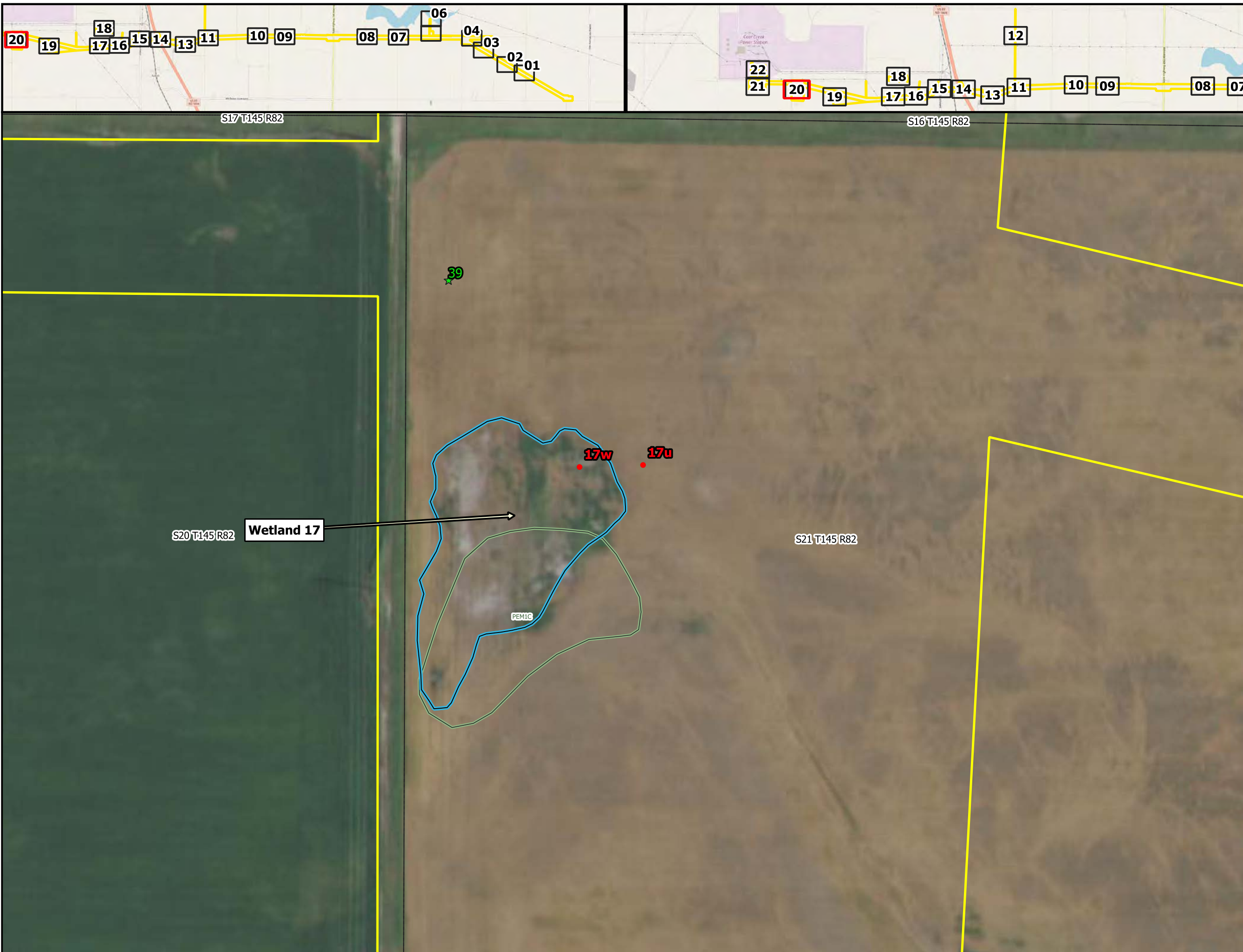
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 Map Date: 2021-08-13 10:36:58
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

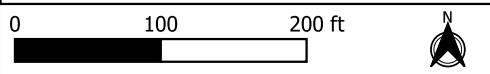
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 19 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



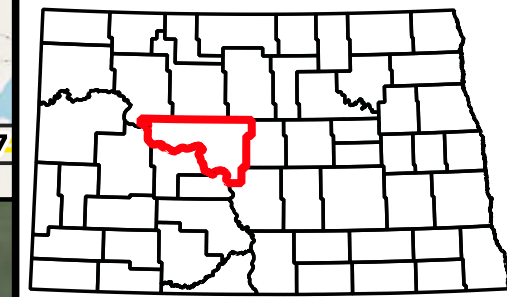
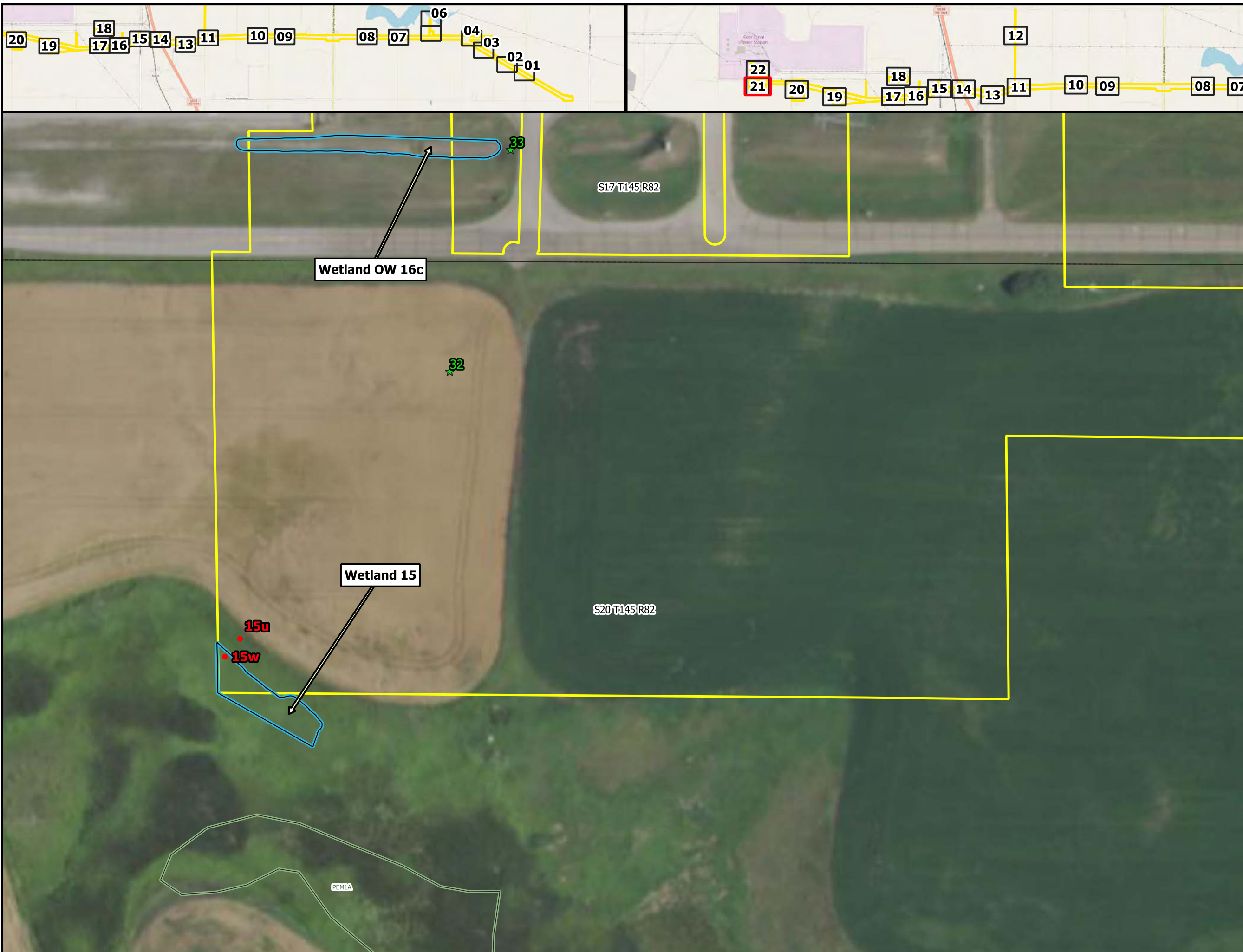
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 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

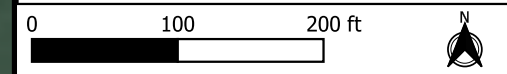
**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 20 of 22**



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- Aquatic Resources
- Field Survey Area
- NWI
- Sections



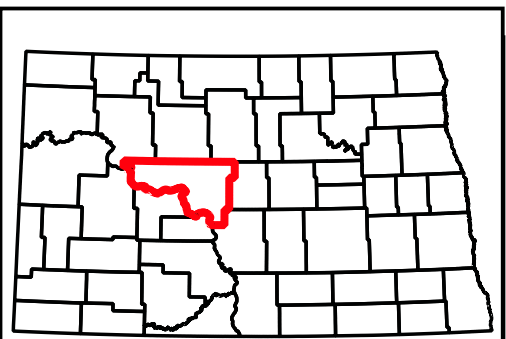
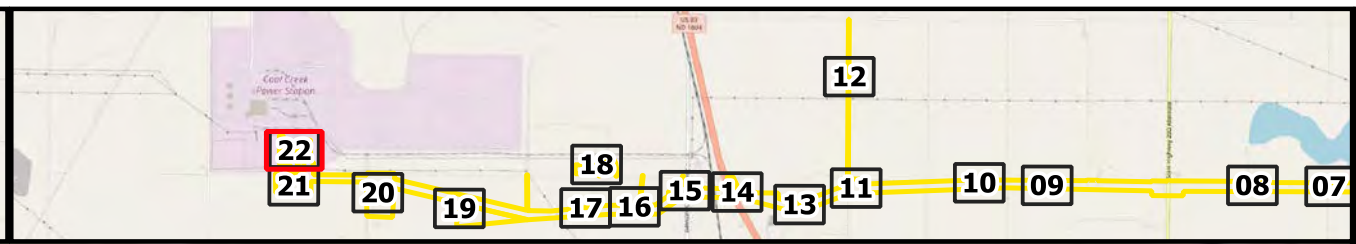
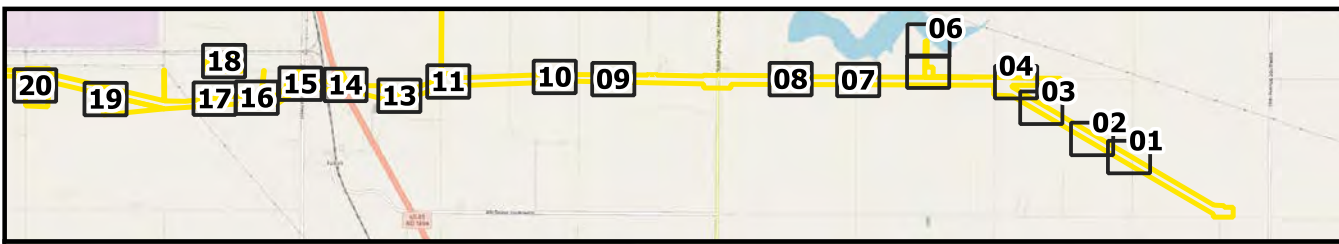
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 Map Date: 2021-08-13 10:37:09
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

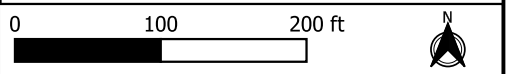
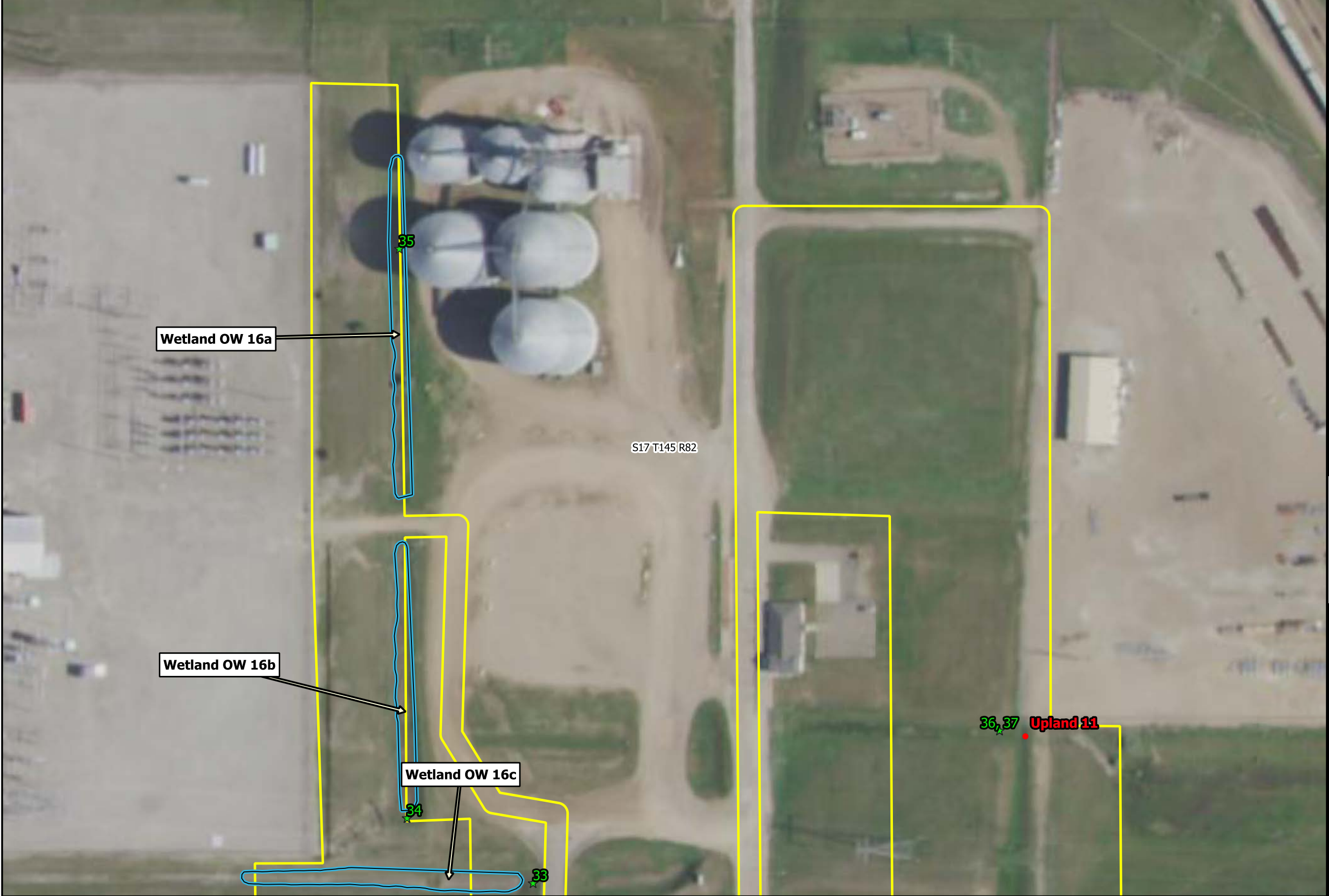
Blue Flint Ethanol Plant
Lateral
WBI Energy, Inc.

Exhibit 1
Map 21 of 22



McLean County, North Dakota

- ★ Photograph Location
- Transect Points
- ▭ Aquatic Resources
- ▭ Field Survey Area
- ▭ NWI
- ▭ Sections



Surveyor: LToso, AGoblirsch
 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
 Map Date: 2021-08-13 10:37:14
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



AQUATIC RESOURCES MAP

**Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.**

**Exhibit 1
 Map 22 of 22**

Appendix B – Supporting Maps

Appendix C – Photographs



Photo 1. View northeast of Upland 1.



Photo 2. View north overlooking a smooth brome dominated swale just west of Upland 1.



Photo 3. View west of Wetland 1. The subtle concave surface in the background indicates the wetland boundary.



Photo 4. View southwest of Upland 2.



Photo 5. View northwest of Wetland 2.



Photo 6. View east of Upland 3.



Photo 7. View north of Wetland 3.



Photo 8. View west of Wetland 4.



Photo 9. View northwest of Upland 4.



Photo 10. View east of Wetland 5.



Photo 11. View northwest of Upland 5.



Photo 12. View west of Upland 6.



Photo 13. View southwest of Upland 7.



Photo 14. View north of Wetland 6.



Photo 15. View north of Wetland 7.



Photo 16. View southeast of Upland 8.



Photo 17. View northeast of Wetland 8.



Photo 18. View north of Upland 9.



Photo 19. View north of Wetland 9.



Photo 20. View south of Wetland 9.



Photo 21. View south overlooking an isolated depression just south of the survey area.



Photo 22. View northwest of Upland 10.



Photo 23. View south of Wetland 10.



Photo 24. View west of Wetland 11a.



Photo 25. View northwest of Wetland 11c.



Photo 26. View northeast of Wetland 11d.



Photo 27. View west of Wetland 12.



Photo 28. View northwest of Wetland 13a.



Photo 29. View south of Wetland 13b.



Photo 30. View south of Wetland 13c.



Photo 31. View west of Wetland 14.



Photo 32. View southwest of Wetland 15.



Photo 33. View west of Other Water 16c.



Photo 34. View north overlooking Other Water 16b.



Photo 35. View north overlooking Other Water 16a.



Photo 36. View west of Upland 11.



Photo 37. View north of Upland 11.



Photo 38. View south of Upland 12.



Photo 39. View south of Wetland 17



Photo 40. View northwest of Wetland 18



Photo 41. View south of Upland 13.



Photo 42. View west of Upland 14.

Appendix D – Plant List

Table 3. Plant Species Present Within the Survey Area

Scientific Name	Common Name	Wetland Indicator Status*
<i>Artemisia ludoviciana</i>	Silver Wormwood	UPL
<i>Bromus inermis</i>	Smooth Brome	UPL
<i>Distichlis spicata</i>	Inland Saltgrass	FACW
<i>Echinochloa crus-galli</i>	Cockspur	FAC
<i>Elymus repens</i>	Couch Grass	FACU
<i>Fraxinus pennsylvanica</i>	Green Ash	FACU
<i>Hordeum jubatum</i>	Foxtail Barley	FACW
<i>Pascopyrum smithii</i>	Western Wheatgrass	FACU
<i>Phalaris arundinacea</i>	Reed Canary Grass	FACW
<i>Poa pratensis</i>	Kentucky bluegrass	FACU
<i>Populus deltoides</i>	Cottonwood	FAC
<i>Spartina pectinata</i>	Prairie cordgrass	FACW
<i>Typha latifolia</i>	Cattail	OBL

* Wetland Indicator Status (WIS):

OBL = occurs in aquatic resources > 99% of time
 FACW = occurs in aquatic resources 67-99% of time
 FAC = occurs in aquatic resources 34-66% of time
 FACU = occurs in aquatic resources 1-33% of time
 UPL = occurs in uplands > 99% of time
 NI = indicator status not known in this region
 ~ = unsure as to FAC or FACU

Appendix E - U.S. Army Corps of Engineers Wetland Data Sheets

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/2021
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 1u
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R81W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 2 Lat: 47.363867 Long: -100.973947 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: PEM1C

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundary mapped based on soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum		<u>100</u>			

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: 1u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-14	10YR	2/1	100					Loam	
14-18	10YR	4/3	100					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- Moist Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? N

Remarks:

Hydric soil indicators absent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) | <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | <input type="checkbox"/> Frost-Heaved Hummocks (LRR F) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | |

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): _____
 Saturation present? Yes No Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 1w
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R81W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 47.363951 Long: -100.973988 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: PEM1C

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundry mapped based on soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* <input checked="" type="checkbox"/> (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Statum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent. Area assumed to be dominated by hydrophytic vegetation based on the presence of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: 1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-10	10YR	2/1	95	7.5YR	4/4	5	C	M	Loam
10-18	10YR	3/2	100						Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
---	--	--

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
--	--------------------------------------

Remarks:
Hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
---	--

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 2u
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R81W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex
 Slope (%): 4 Lat: 47.36753 Long: -100.983947 Datum: WGS 84
 Soil Map Unit Name Tonka-Parnell complex, 0 to 1 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundary mapped based on soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u> = Total Cover			Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u> = Total Cover			
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u> = Total Cover			
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u> = Total Cover			
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: 2u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-12	10YR	2/1	100					Loam	
12-18	2.5YR	4/2	100					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u>N</u></p>
---	---

Remarks:
Hydric soil indicators absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 2w
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R81W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 47.367399 Long: -100.983625 Datum: WGS 84
 Soil Map Unit Name Tonka-Parnell complex, 0 to 1 percent slopes NWI Classification: PEM1C

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundary mapped based on soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* X (explain)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum		<u>100</u>			Hydrophytic vegetation present? <u>Y</u>

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: 2w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-12	10YR	2/1	95	7.5YR	4/4	5	C	M	Loam
12-30	10YR	3/1							Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
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Remarks:
Hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 3u
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R81W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 2 Lat: 47.371020 Long: -100.990202 Datum: WGS 84
 Soil Map Unit Name Falkirk loam, 0 to 3 percent slopes NWI Classification: PEM1C
 Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y

Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundary mapped based on previous years crop stress, soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum		<u>100</u>			

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Mottles				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-17	10YR	2/1					Loam	
17-20	10YR	2/1					Clay	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):	Hydric soil present? <u>N</u>
Type: <u>Dense clay</u> Depth (inches): <u>20</u>	

Remarks:
Restrictive claypan at 20 inches. Area assumed upland based on sloping topography, lack of hydrology indicators, and evidence of healthy crops based on previous years growth..

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
<p>Check here if indicators are not present: <input checked="" type="checkbox"/></p>	

Field Observations:	Indicators of wetland hydrology present? <u>N</u>
Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 3w
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R81W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 47.370993 Long: -100.989932 Datum: WGS 84
 Soil Map Unit Name Falkirk loam, 0 to 3 percent slopes NWI Classification: PEM1C

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundary mapped based on crop stress, soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>5</u> (A) <u>15</u> (B) Prevalence Index = B/A = <u>3.00</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u>Echinochloa crus-galli</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>5</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>95</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation mostly absent due to agricultural activities.

SOIL

Sampling Point: 3w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-12	10YR	2/1	95	7.5YR	4/4	5	C	M	Clay Loam
12-20	10YR	4/2	90	7.5YR	4/4	10	C	M	Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
--	--	--

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):	Hydric soil present? <u>Y</u>
Type: _____ Depth (inches): _____	

Remarks:
Hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
--	--	---

Check here if indicators are not present:

Field Observations:	Indicators of wetland hydrology present? <u>Y</u>
Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 4u
 Investigator(s): LT/AG Section, Township, Range: S21, T145N, R81W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex
 Slope (%): 2 Lat: 47.370839 Long: -101.003804 Datum: WGS 84
 Soil Map Unit Name Roseglen silt loam, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundary mapped based on soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum _____					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: 4u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-8	10YR	2/1	100					Clay	
8-16	10YR	4/3	100					Clay	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- Moist Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? N

Remarks:

Hydric soil indicators absent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | <input type="checkbox"/> Frost-Heaved Hummocks (LRR F) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | |

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): _____
 Saturation present? Yes No Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 4w
 Investigator(s): LT/AG Section, Township, Range: S21, 145N, R81W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 47.371011 Long: -101.003353 Datum: WGS 84
 Soil Map Unit Name Tonka-Parnell complex, 0 to 1 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundary mapped based on soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u> = Total Cover			Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u> = Total Cover			
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: ___ Rapid test for hydrophytic vegetation ___ Dominance test is >50% ___ Prevalence index is ≤3.0* ___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) ___ Problematic hydrophytic vegetation* X (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u> = Total Cover			
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u> = Total Cover			
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed hydrophytic based on the presence of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: 4w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-8	10YR	2/1	100					Loam	
8-11	10YR	2/1	30					Clay Loam	
8-11	10YR	4/2	65	7.5YR	4/4	5	C	M	Clay Loam
11-20	10YR	5/1	95	10YR	4/6	5	C	M	Clay

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
--	--------------------------------------

Remarks:
Hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
Check here if indicators are not present: <input type="checkbox"/>	

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
--	--

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

SOIL

Sampling Point: 5u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-8	10YR	2/1	100					Loam	
8-16	10YR	4/4	100					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- Moist Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? N

Remarks:

Hydric soil indicators absent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | <input type="checkbox"/> Frost-Heaved Hummocks (LRR F) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | |

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): _____
 Saturation present? Yes No Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 5w
 Investigator(s): LT/AG Section, Township, Range: S16, T145N, R81W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 47.375273 Long: -101.003584 Datum: WGS 84
 Soil Map Unit Name Wamduska low precipitation-Mauvais complex NWI Classification: L2ABG
 Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y

Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken on shoreline of large lake.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: ___ Rapid test for hydrophytic vegetation ___ Dominance test is >50% ___ Prevalence index is ≤3.0* ___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) ___ Problematic hydrophytic vegetation* X (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum _____					

Remarks: (Include photo numbers here or on a separate sheet)
 Vegetation absent due to lake. Assume wetland based on hydric soil indicators and wetland hydrology indicators.

SOIL

Sampling Point: 5w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Mottles				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-2		100					Loam	
2-12	Gley 2	3/5BG	100				Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
--	--------------------------------------

Remarks:
Hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12+</u> Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 6u
 Investigator(s): LT/AG Section, Township, Range: S19, T145N, R81W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex
 Slope (%): 5 Lat: 47.371148 Long: -101.049718 Datum: WGS 84
 Soil Map Unit Name Harriet-Regan-Stirum complex, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in woodland drainageway.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>70</u> x 5 = <u>350</u> Column totals <u>100</u> (A) <u>470</u> (B) Prevalence Index = B/A = <u>4.70</u>
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
1	<u>Bromus inermis</u>	<u>70</u>	<u>Y</u>	<u>UPL</u>	
2	<u>Elymus repens</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
3					
4					
5					
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>					Hydrophytic vegetation present? <u>N</u>

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: 6u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-12	10YR	2/1	100					Loam	
12-24	10YR	4/3	100					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u>N</u></p>
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Remarks:
Hydric soil indicators absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 6w
 Investigator(s): LT/AG Section, Township, Range: S19, T145N, R81W
 Landform (hillslope, terrace, etc.): drainageway Local relief (concave, convex, none): concave
 Slope (%): 2 Lat: 47.37118 Long: -101.049826 Datum: WGS 84
 Soil Map Unit Name Harriet-Regan-Stirum complex, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in wooded drainageway.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>100</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>2.00</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<i>Phalaris arundinacea</i>	100	Y	FACW	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Hydrophytic vegetation dominates.

SOIL

Sampling Point: 6w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks	
	Color (moist)		%	Color (moist)		%	Type*			Loc**
0-12	10YR	2/1	95	10YR	4/6	5	C	M	Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> East Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
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Remarks:
Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
<p>Check here if indicators are not present: <input type="checkbox"/></p>	

<p>Field Observations:</p> Surface water present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6+</u> Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>Y</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 7u
 Investigator(s): LT/AG Section, Township, Range: S19, T145N, R81W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex
 Slope (%): 4 Lat: 47.371234 Long: -101.053358 Datum: WGS 84
 Soil Map Unit Name Zahl-Max-Arnegard loams, 15 to 60 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken uphill of wetland drainageway.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>100</u> x 5 = <u>500</u> Column totals <u>100</u> (A) <u>500</u> (B) Prevalence Index = B/A = <u>5.00</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: ___ Rapid test for hydrophytic vegetation ___ Dominance test is >50% ___ Prevalence index is ≤3.0* ___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) ___ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u>Bromus inermis</u>	<u>100</u>	<u>Y</u>	<u>UPL</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: 7u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-18	10YR	2/1	100					Loam	
18-25	10YR	4/1	95	10YR	4/6	5	C	M	Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- Moist Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? N

Remarks:
Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | <input type="checkbox"/> Frost-Heaved Hummocks (LRR F) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | |

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): _____
 Saturation present? Yes No Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 7w
 Investigator(s): LT/AG Section, Township, Range: S19,T145N, R81W
 Landform (hillslope, terrace, etc.): drainageway Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 47.371241 Long: -101.05316 Datum: WGS 84
 Soil Map Unit Name Zahl-Max-Arnegard loams, 15 to 60 percent slopes NWI Classification: R4SBC

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in drainageway. Point taken within 2 NWI polygons.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet Total % Cover of: OBL species <u>90</u> x 1 = <u>90</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>90</u> (A) <u>90</u> (B) Prevalence Index = B/A = <u>1.00</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u>Typha latifolia</u>	<u>90</u>	<u>Y</u>	<u>OBL</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>90</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>Y</u>
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum		<u>10</u>			

Remarks: (Include photo numbers here or on a separate sheet)
 Hydrophytic vegetation dominates.

SOIL

Sampling Point: 7w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-12	10YR	2/1	95	10YR	4/6	5	C	M	Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- Moist Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? Y

Remarks:

Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | <input type="checkbox"/> Frost-Heaved Hummocks (LRR F) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | |

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): 12+
 Water table present? Yes No Depth (inches): 6
 Saturation present? (includes capillary fringe) Yes No Depth (inches): 0

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 8u
 Investigator(s): LT/AG Section, Township, Range: S24, T145N, R82W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex
 Slope (%): 5 Lat: 47.371257 Long: -101.06211 Datum: WGS 84
 Soil Map Unit Name Tonka-Parnell complex, 0 to 1 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
		<u>0</u>	= Total Cover		Hydrophytic vegetation present? <u>N</u>
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Bare with *Bromus inermis* nearby.

SOIL

Sampling Point: 8u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-8	10YR	2/2	100						
8-25	10YR	4/2	100						

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>N</u>
--	--------------------------------------

Remarks:
Hydric soils absent.

HYDROLOGY

Wetland Hydrology Indicators:

<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
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Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
--	--

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 8w
 Investigator(s): LT/AG Section, Township, Range: S24, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 47.371235 Long: -101.061961 Datum: WGS 84
 Soil Map Unit Name Tonka-Parnell complex, 0 to 1 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: ___ Rapid test for hydrophytic vegetation ___ Dominance test is >50% ___ Prevalence index is ≤3.0* ___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) ___ Problematic hydrophytic vegetation* X (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Bare with *Bromus inermis* nearby. Assume wetland based on the presence of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: 8w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-20	10YR	2/1	100					Loam	
20-25	10YR	3/1	95	7.5YR	4/4	5	C	M	Clay Loam
25-32	10YR	4/2	80	7.5YR	4/4	20	C	M	Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
---	--	--

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
--	--------------------------------------

Remarks:
Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
Check here if indicators are not present: <input type="checkbox"/>	

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 9u
 Investigator(s): LT/AG Section, Township, Range: S23, T145N, R82W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex
 Slope (%): 5 Lat: 47.368839 Long: -101.085265 Datum: WGS 84
 Soil Map Unit Name Bowdle loam, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				Hydrophytic vegetation present? <u>N</u>
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Vegetation absent in upland.

SOIL

Sampling Point: 9u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-22	10YR	2/2	100					Clay Loam	
22-40	10YR	3/1	100					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u>N</u></p>
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Remarks:
Hydric soils absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 9w
 Investigator(s): LT/AG Section, Township, Range: S23, T145N, R82W
 Landform (hillslope, terrace, etc.): drainageway Local relief (concave, convex, none): concave
 Slope (%): 2 Lat: 47.368821 Long: -101.085164 Datum: WGS 84
 Soil Map Unit Name Bowdle loam, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>10</u> (A) <u>20</u> (B) Prevalence Index = B/A = <u>2.00</u>
Sapling/Shrub stratum (Plot size: <u>15 ft</u>)					
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum (Plot size: <u>5 ft</u>)					Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u>Hordeum jubatum</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>10</u>	= Total Cover		
Woody vine stratum (Plot size: <u>30 ft</u>)					Hydrophytic vegetation present? <u>Y</u>
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>90</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Hydrophytic vegetation dominates.

SOIL

Sampling Point: 9w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-18	10YR	2/1	95	7.5YR	4/4	5	C	M	Clay Loam
18-30	10YR	4/2	90	10YR	4/6	10	C	M	Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
--	--------------------------------------

Remarks:
Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
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Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 10u
 Investigator(s): LT/AG Section, Township, Range: S23, T145N, R82W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex
 Slope (%): 5 Lat: 47.369867 Long: -101.095938 Datum: WGS 84
 Soil Map Unit Name Williams-Zahl-Zahill complex, 6 to 9 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1					
2					Total Number of Dominant Species Across all Strata: <u>1</u> (B)
3					Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet
1					
2					OBL species <u>0</u> x 1 = <u>0</u>
3					FACW species <u>0</u> x 2 = <u>0</u>
4					FAC species <u>0</u> x 3 = <u>0</u>
5					FACU species <u>0</u> x 4 = <u>0</u>
		<u>0</u>	= Total Cover		UPL species <u>100</u> x 5 = <u>500</u>
		<u>100</u>	(A)	<u>500</u>	Column totals <u>100</u> (A) <u>500</u> (B)
		<u>0</u>	= Total Cover		Prevalence Index = B/A = <u>5.00</u>
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators:
1	<u>Bromus inermis</u>	<u>100</u>	<u>Y</u>	<u>UPL</u>	
2					<input type="checkbox"/> Dominance test is >50%
3					<input type="checkbox"/> Prevalence index is ≤3.0*
4					<input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5					<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				Hydrophytic vegetation present? <u>N</u>
1					
2					
		<u>0</u>	= Total Cover		
		<u>0</u>			
		<u>0</u>			

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: 10u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Mottles				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	10YR	2/1					Loam	
10-18	10YR	4/3					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- Moist Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? N

Remarks:

Hydric soils absent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | <input type="checkbox"/> Frost-Heaved Hummocks (LRR F) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | |

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): _____
 Saturation present? Yes No Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 10w
 Investigator(s): LT/AG Section, Township, Range: S23, T145N, R82W
 Landform (hillslope, terrace, etc.): drainageway Local relief (concave, convex, none): concave
 Slope (%): 1 Lat: 47.369851 Long: -101.095995 Datum: WGS 84
 Soil Map Unit Name Williams-Zahl-Zahill complex, 6 to 9 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1						Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A)
2					Total Number of Dominant Species Across all Strata: <u>2</u> (B)	
3					Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4						
5						
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet	
1						Total % Cover of:
2					OBL species <u>0</u> x 1 = <u>0</u>	
3					FACW species <u>60</u> x 2 = <u>120</u>	
4					FAC species <u>0</u> x 3 = <u>0</u>	
5					FACU species <u>0</u> x 4 = <u>0</u>	
					UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>60</u> (A) <u>120</u> (B)	
					Prevalence Index = B/A = <u>2.00</u>	
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phalaris arundinacea</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>		<input type="checkbox"/> Rapid test for hydrophytic vegetation
2	<u>Spartina pectinata</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>		<input checked="" type="checkbox"/> Dominance test is >50%
3						<input checked="" type="checkbox"/> Prevalence index is ≤3.0*
4						Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5						Problematic hydrophytic vegetation* (explain)
6						
7						
8						
9						
10						
		<u>60</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>30 ft</u>)					
1					*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
2						
		<u>0</u>	= Total Cover			
		<u>40</u>				

Remarks: (Include photo numbers here or on a separate sheet)
 Hydrophytic vegetation dominates.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 11u-1
 Investigator(s): LT/AG Section, Township, Range: S23, T145N, R82W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 3 Lat: 47.370422 Long: -101.097948 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken on hillside in pasture.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>100</u> x 4 = <u>400</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>100</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>4.00</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u>Pascopyrum smithii</u>	<u>100</u>	<u>Y</u>	<u>FACU</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: 11u-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Mottles				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	10YR	2/1					Loam	
12-20	10YR	4/4					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- Moist Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? N

Remarks:
Hydric soils are absent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | <input type="checkbox"/> Frost-Heaved Hummocks (LRR F) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | |

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): _____
 Saturation present? Yes No Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 11u-2
 Investigator(s): LT/AG Section, Township, Range: S23, T145N, R82W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 5 Lat: 47.369768 Long: -101.09899 Datum: WGS 84
 Soil Map Unit Name Harriet-Regan-Stirum complex, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken on hillside in pasture.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>95</u> x 4 = <u>380</u> UPL species <u>5</u> x 5 = <u>25</u> Column totals <u>100</u> (A) <u>405</u> (B) Prevalence Index = B/A = <u>4.05</u>
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
1	<u>Pascopyrum smithii</u>	<u>95</u>	<u>Y</u>	<u>FACU</u>	
2	<u>Artemisia ludoviciana</u>	<u>5</u>	<u>N</u>	<u>UPL</u>	
3					
4					
5					
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
		<u>0</u>	= Total Cover		Hydrophytic vegetation present? <u>N</u>
% Bare Ground in Herb Stratum <u>0</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: 11u-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Mottles				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	10YR	2/1					Loam	
12-20	10YR	4/4					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>N</u>
--	--------------------------------------

Remarks:
Hydric soils are absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
Check here if indicators are not present: <input checked="" type="checkbox"/>	

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 11u-3
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R82W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 3 Lat: 47.370397 Long: -101.100529 Datum: WGS 84
 Soil Map Unit Name Harriet-Regan-Stirum complex, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>100</u> x 5 = <u>500</u> Column totals <u>100</u> (A) <u>500</u> (B) Prevalence Index = B/A = <u>5.00</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
1	<u>Bromus inermis</u>	<u>100</u>	<u>Y</u>	<u>UPL</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				Hydrophytic vegetation present? <u>N</u>
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: 11u-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Mottles				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-30	10YR	2/1					Clay Loam	
30-35	10YR	4/3					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
---	--	--

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>N</u>
--	--------------------------------------

Remarks:
Hydric soils absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 11w-1
 Investigator(s): LT/AG Section, Township, Range: S23, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 1 Lat: 47.370462 Long: -101.097906 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken in saline wetland.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1					
2					Total Number of Dominant Species Across all Strata: <u>1</u> (B)
3					Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet
1					
2					OBL species <u>0</u> x 1 = <u>0</u>
3					FACW species <u>40</u> x 2 = <u>80</u>
4					FAC species <u>0</u> x 3 = <u>0</u>
5					FACU species <u>0</u> x 4 = <u>0</u>
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
		<u>40</u>	(A)		Column totals <u>40</u> (A) <u>80</u> (B)
		<u>40</u>	(A)		Prevalence Index = B/A = <u>2.00</u>
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators:
1	<u><i>Distichlis spicata</i></u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	
2					<input checked="" type="checkbox"/> Dominance test is >50%
3					<input checked="" type="checkbox"/> Prevalence index is ≤3.0*
4					Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5					Problematic hydrophytic vegetation* (explain)
6					
7					
8					
9					
10					
		<u>40</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
		<u>60</u>			

Remarks: (Include photo numbers here or on a separate sheet)
 Hydrophytic vegetation dominates.

SOIL

Sampling Point: 11w-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type*		
0-12	10YR	2/1	95	7.5YR	4/4	5	C	M	SiCL

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> East Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
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Remarks:
Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
<input checked="" type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 11w-2
 Investigator(s): LT/AG Section, Township, Range: S23, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 1 Lat: 47.369729 Long: -101.099 Datum: WGS 84
 Soil Map Unit Name Harriet-Regan-Stirum complex, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken in low saline wetland.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>40</u> (A) <u>80</u> (B) Prevalence Index = B/A = <u>2.00</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
1	<u><i>Distichlis spicata</i></u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>40</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic Hydrophytic vegetation present? <u>Y</u>
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>60</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Hydrophytic vegetation dominates.

SOIL

Sampling Point: 11w-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-12	10YR	2/1	95	7.5YR	4/4	5	C	M	SiCL

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
--	--------------------------------------

Remarks:
Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
Check here if indicators are not present: <input type="checkbox"/>	

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 11w-3
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 1 Lat: 47.370396 Long: -101.100365 Datum: WGS 84
 Soil Map Unit Name Harriet-Regan-Stirum complex, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1						Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)
2					Total Number of Dominant Species Across all Strata: <u>2</u> (B)	
3					Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)	
4						
5						
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet	
1						Total % Cover of:
2					OBL species <u>70</u> x 1 = <u>70</u>	
3					FACW species <u>0</u> x 2 = <u>0</u>	
4					FAC species <u>0</u> x 3 = <u>0</u>	
5					FACU species <u>20</u> x 4 = <u>80</u>	
					UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>90</u> (A) <u>150</u> (B)	
					Prevalence Index = B/A = <u>1.67</u>	
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators:	
1	<u><i>Typha angustifolia</i></u>	<u>70</u>	<u>Y</u>	<u>OBL</u>		<input type="checkbox"/> Rapid test for hydrophytic vegetation
2	<u><i>Elymus repens</i></u>	<u>20</u>	<u>Y</u>	<u>FACU</u>		<input type="checkbox"/> Dominance test is >50%
3						<input checked="" type="checkbox"/> Prevalence index is ≤3.0*
4						Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5						<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
6						
7						
8						
9						
10						
		<u>90</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>30 ft</u>)					
1						
2						
		<u>0</u>	= Total Cover			
		<u>10</u>				

Remarks: (Include photo numbers here or on a separate sheet)
 Hydrophytic vegetation dominates.

SOIL

Sampling Point: 11w-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks	
	Color (moist)	%		Color (moist)	%	Type*	Loc**			
0-12	10YR	2/1	95	7.5YR	4/4	5	C	M	SCL	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> East Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
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Remarks:
Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 12u
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R82W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 3 Lat: 47.369925 Long: -101.101972 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>60</u> x 4 = <u>240</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>60</u> (A) <u>240</u> (B) Prevalence Index = B/A = <u>4.00</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
1	<u>Pascopyrum smithii</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
2	<u>Salvia lycioides</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3					
4					
5					
6					
7					
8					
9					
10					
		<u>60</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>40</u>					Hydrophytic vegetation present? <u>N</u>

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: 12u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-12	10YR	2/1	100					Loam	
12-20	10YR	4/4	100					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- Moist Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? N

Remarks:

Hydric soils absent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | <input type="checkbox"/> Frost-Heaved Hummocks (LRR F) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | |

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): _____
 Saturation present? Yes No Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 12w
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 1 Lat: 47.369785 Long: -101.10201 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: PEM1C
 Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydic soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet	
1					Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2					Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3					Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4						
5						
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet	
1					Total % Cover of:	
2					OBL species <u>0</u> x 1 = <u>0</u>	
3					FACW species <u>30</u> x 2 = <u>60</u>	
4					FAC species <u>0</u> x 3 = <u>0</u>	
5					FACU species <u>0</u> x 4 = <u>0</u>	
					UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>30</u> (A) <u>60</u> (B)	
					Prevalence Index = B/A = <u>2.00</u>	
		<u>0</u>	= Total Cover			
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Distichlis spicata</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	<input type="checkbox"/> Rapid test for hydrophytic vegetation	
2					<input checked="" type="checkbox"/> Dominance test is >50%	
3					<input checked="" type="checkbox"/> Prevalence index is ≤3.0*	
4					<input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5					<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)	
6						
7						
8						
9						
10						
		<u>30</u>	= Total Cover		*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
Woody vine stratum	(Plot size: <u>30 ft</u>)				Hydrophytic vegetation present? <u>Y</u>	
1						
2						
		<u>0</u>	= Total Cover			
		<u>70</u>				

Remarks: (Include photo numbers here or on a separate sheet)

Hydrophytic vegetation dominates.

SOIL

Sampling Point: 12w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type*	Loc**		
0-6	10YR	2/1	100					Clay Loam	
6-20	10YR	4/2	95	10YR	4/6	5	C	M	Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)

- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- Post Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? Y

Remarks:

Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Fauna (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (not tilled) (C3)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (tilled) (C3)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): _____
 Saturation present? Yes No Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 13u-1
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R82W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 1 Lat: 47.368054 Long: -101.103878 Datum: WGS 84
 Soil Map Unit Name Williams-Zahl-Zahill complex, 6 to 9 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken on slight rise above wetland depression.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>80</u> x 5 = <u>400</u> Column totals <u>100</u> (A) <u>480</u> (B) Prevalence Index = B/A = <u>4.80</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				
1	<u>Bromus inermis</u>	<u>80</u>	<u>Y</u>	<u>UPL</u>	
2	<u>Elymus repens</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3					
4					
5					
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: 13u-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-11	10YR	2/1	100					Loam	
11-16	10YR	3/1	100					Clay Loam	
16-25	10YR	4/2	95	10YR	4/6	5	C M	Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input checked="" type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
--	--------------------------------------

Remarks:
Hydric soils are present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 13u-2
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R82W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 1 Lat: 47.368665 Long: -101.108737 Datum: WGS 84
 Soil Map Unit Name Divide loam, 0 to 2 percent slopes NWI Classification: PEM1C
 Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland?	<u>N</u>
Hydric soil present?	<u>N</u>		
Indicators of wetland hydrology present?	<u>N</u>		

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in native area. Point taken in a NWI polygon.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet	
1					Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A)	
2					Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3					Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)	
4						
5						
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet	
1					Total % Cover of:	
2					OBL species <u>0</u> x 1 = <u>0</u>	
3					FACW species <u>0</u> x 2 = <u>0</u>	
4					FAC species <u>0</u> x 3 = <u>0</u>	
5					FACU species <u>100</u> x 4 = <u>400</u>	
					UPL species <u>0</u> x 5 = <u>0</u>	
					Column totals <u>100</u> (A) <u>400</u> (B)	
					Prevalence Index = B/A = <u>4.00</u>	
		<u>0</u>	= Total Cover			
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Elymus repens</u>	<u>100</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> Rapid test for hydrophytic vegetation	
2					<input type="checkbox"/> Dominance test is >50%	
3					<input type="checkbox"/> Prevalence index is ≤3.0*	
4					<input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5					<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)	
6						
7						
8						
9						
10						
		<u>100</u>	= Total Cover		*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
Woody vine stratum	(Plot size: <u>30 ft</u>)				Hydrophytic vegetation present?	
1					<u>N</u>	
2						
		<u>0</u>	= Total Cover			

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: 13u-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (Inches)	Matrix			Mottles			Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*		
0-4	10YR	2/1	100					Clay Loam
4-18	10YR	3/3	100					Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Post Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u>N</u></p>
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Remarks:
Hydric soils absent.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one is required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)			<p>Secondary Indicators (minimum of two required)</p> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)			<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)		
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Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 13u-3
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R82W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 3 Lat: 47.368106 Long: -101.116174 Datum: WGS 84
 Soil Map Unit Name Bowdle loam, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken at western edge of large wetland complex.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u> = Total Cover			
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>100</u> x 5 = <u>500</u> Column totals <u>100</u> (A) <u>500</u> (B) Prevalence Index = B/A = <u>5.00</u>
1					
2					
3					
4					
5					
		<u>0</u> = Total Cover			
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: ___ Rapid test for hydrophytic vegetation ___ Dominance test is >50% ___ Prevalence index is ≤3.0* ___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) ___ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u>Bromus inermis</u>	<u>100</u>	<u>Y</u>	<u>UPL</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>100</u> = Total Cover			
Woody vine stratum	(Plot size: <u>30 ft</u>)				Hydrophytic vegetation present? <u>N</u>
1					
2					
		<u>0</u> = Total Cover			
% Bare Ground in Herb Stratum <u>0</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: 13u-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-14	10YR	2/1	100					Loam	
14-18	10YR	3/1	100					Clay Loam	
18-28	10YR	4/2	95	10YR	4/6	5	C M	Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input checked="" type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
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Remarks:
Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 13w-1
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 47.367997 Long: -101.104153 Datum: WGS 84
 Soil Map Unit Name Parnell silty clay loam, 0 to 1 percent slopes NWI Classification: PEM1/ABF

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1						Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A)
2					Total Number of Dominant Species Across all Strata: <u>2</u> (B)	
3					Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4						
5						
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet	
1						Total % Cover of:
2					OBL species <u>80</u> x 1 = <u>80</u>	
3					FACW species <u>20</u> x 2 = <u>40</u>	
4					FAC species <u>0</u> x 3 = <u>0</u>	
5					FACU species <u>0</u> x 4 = <u>0</u>	
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
		<u>100</u>	= Total Cover		Column totals <u>100</u> (A) <u>120</u> (B)	
					Prevalence Index = B/A = <u>1.20</u>	
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Typha angustifolia</u>	<u>80</u>	<u>Y</u>	<u>OBL</u>		<input type="checkbox"/> Rapid test for hydrophytic vegetation
2	<u>Spartina pectinata</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>		<input checked="" type="checkbox"/> Dominance test is >50%
3						<input checked="" type="checkbox"/> Prevalence index is ≤3.0*
4						Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5						Problematic hydrophytic vegetation* (explain)
6						
7						
8						
9						
10						
		<u>100</u>	= Total Cover			
Woody vine stratum	(Plot size: <u>30 ft</u>)				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
1						
2						
		<u>0</u>	= Total Cover			
		<u>0</u>			Hydrophytic vegetation present? <u>Y</u>	

Remarks: (Include photo numbers here or on a separate sheet)
 Hydrophytic vegetation dominates.

SOIL

Sampling Point: 13w-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-12	10YR	2/1	95	7.5YR	4/6	5	C	M	Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
--	--------------------------------------

Remarks:
Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 13w-2
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 47.368534 Long: -101.108616 Datum: WGS 84
 Soil Map Unit Name Divide loam, 0 to 2 percent slopes NWI Classification: PEM1C

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in native area. Point taken in NWI polygon.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>70</u> (A) <u>170</u> (B) Prevalence Index = B/A = <u>2.43</u>
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
1	<i>Spartina pectinata</i>	40	Y	FACW	
2	<i>Elymus repens</i>	20	Y	FACU	
3	<i>Typha latifolia</i>	10	N	OBL	
4					
5					
6					
7					
8					
9					
10					
		<u>70</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic Hydrophytic vegetation present? <u>Y</u>
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum		<u>10</u>			

Remarks: (Include photo numbers here or on a separate sheet)
 20% litter in herb stratum. Hydrophytic vegetation dominates.

SOIL

Sampling Point: 13w-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type*		
0-12	10YR	2/1	95	10YR	4/6	5	C	M	Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- East Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? Y

Remarks:
Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) | <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Other (Explain in Remarks) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | <input type="checkbox"/> Frost-Heaved Hummocks (LRR F) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | |

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): _____
 Saturation present? Yes No Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 13w-3
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 1 Lat: 47.368093 Long: -101.116009 Datum: WGS 84
 Soil Map Unit Name Bowdle loam, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>100</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>2.00</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u>Spartina pectinata</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Hydrophytic vegetation dominates.

SOIL

Sampling Point: 13w-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-9	10YR	2/1	100					Silty Clay Loam	
9-18	10YR	4/1	95	10YR	4/6	5	C	M	Silty Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> East Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
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Remarks:
Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 14u
 Investigator(s): LT/AG Section, Township, Range: S21, T145N, R82W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 3 Lat: 47.369598 Long: -101.130614 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundary mapped based on soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: 14u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-14	10YR	3/1	100					Loam	
14-24	10YR	3/2	100					Loam	
24-30	10YR	2/1	95	7.5YR	4/4	5	C	M	Clay

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>N</u>
--	--------------------------------------

Remarks:
Hydric soils absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
Check here if indicators are not present: <input checked="" type="checkbox"/>	

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
--	--

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 14w
 Investigator(s): LT/AG Section, Township, Range: S21, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 47.36966 Long: -101.130984 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 0 to 3 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundary mapped based on soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: ___ Rapid test for hydrophytic vegetation ___ Dominance test is >50% ___ Prevalence index is ≤3.0* ___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) ___ Problematic hydrophytic vegetation* X (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed hydrophytic based on the presence of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: 14w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-10	10YR	2/1	100					Loam	
10-34	10YR	2/1	95	7.5YR	4/4	5	C	M	Clay Loam
34-37	10YR	3/1	100						Clay Loam
37-40	10YR	4/2	95	7.5YR	4/4	5	C	M	Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- Moist Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? Y

Remarks:

Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

Secondary Indicators (minimum of two required)

- Salt Crust (B11)
- Aquatic Fauna (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (not tilled) (C3)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)
- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (tilled) (C3)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): _____
 Saturation present? Yes No Depth (inches): 0
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 15u
 Investigator(s): LT/AG Section, Township, Range: S20, T145N, R82W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 3 Lat: 47.369925 Long: -101.154621 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1					
2					Total Number of Dominant Species Across all Strata: <u>1</u> (B)
3					Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet
1					
2					OBL species <u>0</u> x 1 = <u>0</u>
3					FACW species <u>0</u> x 2 = <u>0</u>
4					FAC species <u>0</u> x 3 = <u>0</u>
5					FACU species <u>0</u> x 4 = <u>0</u>
		<u>0</u>	= Total Cover		UPL species <u>50</u> x 5 = <u>250</u>
		<u>50</u>	(A)		Column totals <u>50</u> (A) <u>250</u> (B)
		<u>50</u>	= Total Cover		Prevalence Index = B/A = <u>5.00</u>
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators:
1	<u>Bromus inermis</u>	<u>50</u>	<u>Y</u>	<u>UPL</u>	
2					<input type="checkbox"/> Dominance test is >50%
3					<input type="checkbox"/> Prevalence index is ≤3.0*
4					<input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5					<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
6					
7					
8					
9					
10					
		<u>50</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				Hydrophytic vegetation present? <u>N</u>
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>50</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: 15u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-18	10YR	2/1	100					Loam	
18-25	10YR	5/1	100					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u>N</u></p>
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Remarks:
Hydric soils absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 15w
 Investigator(s): LT/AG Section, Township, Range: S20, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 1 Lat: 47.369851 Long: -101.15471 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1					
2					Total Number of Dominant Species Across all Strata: <u>1</u> (B)
3					Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet
1					
2					OBL species <u>0</u> x 1 = <u>0</u>
3					FACW species <u>100</u> x 2 = <u>200</u>
4					FAC species <u>0</u> x 3 = <u>0</u>
5					FACU species <u>0</u> x 4 = <u>0</u>
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
		<u>100</u>	(A)		Column totals <u>100</u> (A) <u>200</u> (B)
		<u>100</u>	(A)		Prevalence Index = B/A = <u>2.00</u>
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators:
1	<u>Spartina pectinata</u>	<u>100</u>	<u>Y</u>	<u>FACW</u>	
2					<input checked="" type="checkbox"/> Dominance test is >50%
3					<input checked="" type="checkbox"/> Prevalence index is ≤3.0*
4					Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5					Problematic hydrophytic vegetation* (explain)
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
		<u>0</u>	= Total Cover		
		<u>0</u>			Hydrophytic vegetation present? <u>Y</u>

Remarks: (Include photo numbers here or on a separate sheet)
 Hydrophytic vegetation dominates.

SOIL

Sampling Point: 15w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-9	10YR	2/1	100					Loam	
9-20	10YR	3/1	100					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
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Remarks:
Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>Y</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 8/6/2021
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 17u
 Investigator(s): LT/AG Section, Township, Range: S21, T145N, R82W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex
 Slope (%): 2 Lat: 47.370087 Long: -101.141009 Datum: WGS 84
 Soil Map Unit Name Bowbells loam, 0 to 3 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundary mapped based on soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: 17u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-18	10YR	4/3	100					Clay loam	
18-20	10YR	3/2	100					Clay loam	
20-30	10YR	4/3	100					Clay	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>N</u>
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Remarks:
Hydric soil indicators absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 8/6/2021
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 17w
 Investigator(s): LT/AG Section, Township, Range: S21, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 2 Lat: 47.370077 Long: -101.141387 Datum: WGS 84
 Soil Map Unit Name Bowbells loam, 0 to 3 percent slopes NWI Classification: PEM1C

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Boundary mapped based on soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u> = Total Cover			Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u> = Total Cover			
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u> = Total Cover			
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u> = Total Cover			
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed wetland based on the presence of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: 17w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks	
	Color (moist)	%		Color (moist)	%	Type*	Loc**			
0-12	10YR	2/1	95	10YR	4/6	5	C	M	Loam	
12-20	10YR	4/3	100						Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
--	--------------------------------------

Remarks:
Hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
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Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 8/6/2021
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 18u
 Investigator(s): LT/AG Section, Township, Range: S24, T145N, R82W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex
 Slope (%): 3 Lat: 47.370807 Long: -101.077682 Datum: WGS 84
 Soil Map Unit Name Williams-Niobell loams, 0 to 3 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundary mapped based on soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: Rapid test for hydrophytic vegetation Dominance test is >50% Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum		<u>100</u>			

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-20	10YR	2/1	100					Clay loam	
20-28	10YR	3/1	100					Clay loam	
28-30	10YR	4/3	100					Clay loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u>N</u></p>
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Remarks:
Hydric soil indicators absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
<p>Check here if indicators are not present: <input checked="" type="checkbox"/></p>	

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 8/6/2021
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: 18w
 Investigator(s): LT/AG Section, Township, Range: S25, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 2 Lat: 47.370969 Long: -101.077804 Datum: WGS 84
 Soil Map Unit Name Williams-Niobell loams, 0 to 3 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present?	<u>Y</u>	
Indicators of wetland hydrology present?	<u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation absent. Boundary mapped based on soils and topography. Drought conditions are present throughout the region, and the project area is drier than is typical at this time of year.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u> = Total Cover			Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u> = Total Cover			
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u> = Total Cover			
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u> = Total Cover			
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: 18w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-6	10YR	2/1	95	10YR	4/6	5	C	M	Clay loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> East Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u>Y</u></p>
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Remarks:
Hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
<p>Check here if indicators are not present: <input type="checkbox"/></p>	

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	<p>Indicators of wetland hydrology present? <u>Y</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 1
 Investigator(s): LT/AG Section, Township, Range: S23, T145N, R81W
 Landform (hillslope, terrace, etc.): drainageway Local relief (concave, convex, none): concave
 Slope (%): 1-2 Lat: 47.361939 Long: -100.969692 Datum: WGS 84
 Soil Map Unit Name Roseglen silt loam, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken in area that appears to be a drainageway on aerial photographs. Area determined to be upland based on the dominance of upland vegetation and lack of hydric soils and hydrology indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>100</u> x 5 = <u>500</u> Column totals <u>100</u> (A) <u>500</u> (B) Prevalence Index = B/A = <u>5.00</u>
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: ___ Rapid test for hydrophytic vegetation ___ Dominance test is >50% ___ Prevalence index is ≤3.0* ___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) ___ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u>Bromus inermis</u>	<u>100</u>	<u>Y</u>	<u>UPL</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>100</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>		<u>0</u>	= Total Cover		

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: Upland 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-16	10YR	2/1	100					Loam	
16-26	10YR	4/3	100					Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>N</u>
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Remarks:
Hydric soils absent.

HYDROLOGY

Wetland Hydrology Indicators:

<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
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Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 2
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R81W
 Landform (hillslope, terrace, etc.): drainageway Local relief (concave, convex, none): concave
 Slope (%): 5-10 Lat: 47.365142 Long: -100.977862 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken in area that appears to be a drainageway on aerial photographs. Area determined to be upland based on the dominance of upland vegetation and lack of hydric soils and hydrology indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>40</u> x 5 = <u>200</u> Column totals <u>40</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>5.00</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
1	<u>Bromus inermis</u>	<u>40</u>	<u>Y</u>	<u>UPL</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>40</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>60</u>					Hydrophytic vegetation present? <u>N</u>

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominated.

SOIL

Sampling Point: Upland 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-4	10YR	2/1	100					Loam	
4-12	2.5YR	5/3	100	7.5YR	4/4	5	C	M	Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>N</u>
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Remarks:
Hydric soils are absent.

HYDROLOGY

Wetland Hydrology Indicators:

<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
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Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 3
 Investigator(s): LT/AG Section, Township, Range: S22, T145N, R81W
 Landform (hillslope, terrace, etc.): drainageway Local relief (concave, convex, none): concave
 Slope (%): 5 Lat: 47.368942 Long: -100.987477 Datum: WGS 84
 Soil Map Unit Name Falkirk loam, 0 to 3 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken in area that appears to be a drainageway on aerial photographs. Area determined to be upland based on the dominance of upland vegetation and lack of hydric soils and hydrology indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>70</u> x 5 = <u>350</u> Column totals <u>70</u> (A) <u>350</u> (B) Prevalence Index = B/A = <u>5.00</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u>Bromus inermis</u>	<u>70</u>	<u>Y</u>	<u>UPL</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>70</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				Hydrophytic vegetation present? <u>N</u>
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>30</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: Upland 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-12	10YR	2/1	100					Loam	
12-18	10YR	2/2	100					Clay Loam	
18-24	2.5YR	4/3	100					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>N</u>
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Remarks:
Hydric soils absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 4
 Investigator(s): LT/AG Section, Township, Range: S21, T145N, R81W
 Landform (hillslope, terrace, etc.): plains Local relief (concave, convex, none): none
 Slope (%): 0 Lat: 47.370986 Long: -101.005743 Datum: WGS 84
 Soil Map Unit Name Roseglen-Tansem silt loams, 2 to 6 percent slopes NWI Classification: PEM1A
 Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y

Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect taken in NWI polygon within agricultural field. Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: Upland 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-8	10YR	2/1	100					Loam	
8-26	10YR	3/2	100					Clay Loam	
26-30	2.5YR	5/3	100	10YR	4/6	5	C M	Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>N</u>
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Remarks:
Hydric soils absent.

HYDROLOGY

Wetland Hydrology Indicators:

<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
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Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 5
 Investigator(s): LT/AG Section, Township, Range: S21, T145N, R81W
 Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): none
 Slope (%): 0 Lat: 47.371047 Long: -101.012408 Datum: WGS 84
 Soil Map Unit Name Falkirk loam, 0 to 3 percent slopes NWI Classification: PEM1C

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect taken in NWI polygon within agricultural field. Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: Upland 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-8	10YR	2/1	100					Loam	
8-26	10YR	3/2	100					Clay Loam	
26-30	2.5YR	5/3	100	10YR	4/6	5	C	M	Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>N</u>
--	--------------------------------------

Remarks:
Hydric soils are absent.

HYDROLOGY

Wetland Hydrology Indicators:

<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
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Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 6
 Investigator(s): LT/AG Section, Township, Range: S20, T145N, R81W
 Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): none
 Slope (%): 5 Lat: 47.370637 Long: -101.015489 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: PEM1A
 Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y

Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect taken in NWI polygon within agricultural field. Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the sloping topography and lack of hydric soils and wetland hydrology indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: Upland 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks	
	Color (moist)	%		Color (moist)	%	Type*	Loc**			
0-25	10YR	2/1	100					Loam		
25-40	10YR	3/1	100	10YR	4/6	5	C	M	Clay Loam	1-2 in of redox

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>N</u>
--	--------------------------------------

Remarks:
Hydric soils assumed absent. Redox occurred too deep in the soil profile to meet F3. Since sloping topography was present, and crop stress was not apparent, area assumed to contain upland soils.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
Check here if indicators are not present: <input checked="" type="checkbox"/>	

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 7
 Investigator(s): LT/AG Section, Township, Range: S20, T145N, R81W
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none
 Slope (%): 0 Lat: 47.371373 Long: -101.023362 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland?	<u>N</u>
Hydric soil present?	<u>N</u>		
Indicators of wetland hydrology present?	<u>N</u>		

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken to show upland status in old historic homestead.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 <u>Fraxinus pennsylvanica</u>	30	Y	FAC	
2 _____				Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____				Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
4 _____				
5 _____				
<u>30</u> = Total Cover				
Sapling/Shrub stratum (Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____				
2 _____				OBL species <u>0</u> x 1 = <u>0</u>
3 _____				FACW species <u>0</u> x 2 = <u>0</u>
4 _____				FAC species <u>30</u> x 3 = <u>90</u>
5 _____				FACU species <u>0</u> x 4 = <u>0</u>
_____				UPL species <u>100</u> x 5 = <u>500</u>
<u>0</u> = Total Cover				Column totals <u>130</u> (A) <u>590</u> (B)
				Prevalence Index = B/A = <u>4.54</u>
Herb stratum (Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:
1 <u>Bromus inermis</u>	100	Y	UPL	
2 _____				<input type="checkbox"/> Dominance test is >50%
3 _____				<input type="checkbox"/> Prevalence index is ≤3.0*
4 _____				<input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____				<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
<u>100</u> = Total Cover				
Woody vine stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1 _____				
2 _____				
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>				Hydrophytic vegetation present?
				<u>N</u>

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates.

SOIL

Sampling Point: Upland 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Mottles				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)

- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- East Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? N

Remarks:

Soils not excavated since area was dominated by upland vegetation and lacked hydrology indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Aquatic Fauna (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (not tilled) (C3)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (tilled) (C3)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): _____
 Saturation present? Yes No Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 8
 Investigator(s): LT/AG Section, Township, Range: S24, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 1-2 Lat: 47.371243 Long: -101.059661 Datum: WGS 84
 Soil Map Unit Name Roseglen silt loam, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken in depression in agricultural field that appeared saturated on aerial images. Area determined to be upland based on the lack of hydric soils and hydrology indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators

SOIL

Sampling Point: Upland 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-6	10YR	2/1	100					Loam	
6-12	10YR	5/3	100					Clay Loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>N</u>
--	--------------------------------------

Remarks:
Hydric soils are absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/5/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 9
 Investigator(s): LT/AG Section, Township, Range: S23, T145N, R82W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 2 Lat: 47.369637 Long: -101.082923 Datum: WGS 84
 Soil Map Unit Name Bowdle loam, 0 to 2 percent slopes NWI Classification: PEM1C

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect taken in NWI polygon within agricultural field. Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: Rapid test for hydrophytic vegetation Dominance test is >50% Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed hydrophytic based on the presence of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: Upland 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-27	10YR	2/1	100					Clay Loam	
27-33	10YR	3/1	100	10YR	4/6	5	C	M	Clay Loam
33-40	10YR	4/3	100						Clay Loam

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u>N</u></p>
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Remarks:
Hydric soils absent.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one is required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<p>Secondary Indicators (minimum of two required)</p> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)	
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Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/2021
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 10
 Investigator(s): LT/AG Section, Township, Range: S23, T145N, R82W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 47.370192 Long: -101.092361 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 3 to 6 percent slopes NWI Classification: PEM1C
 Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect taken in NWI polygon within agricultural field. Natural vegetation absent due to agricultural activities and drought conditions. Area assumed upland based on the lack of hydric soils and wetland hydrology indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities and drought conditions. Area assumed hydrophytic based on the presence of hydric soils and wetland hydrology indicators.

SOIL

Sampling Point: Upland 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-6	10YR	2/1	100					Clay Loam	
6-7	10YR	2/1	98	7.5YR	4/4	2	C	M	Clay Loam
7-14	10/YR	2/1	100						Clay

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u>N</u></p>
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Remarks:
Hydric soils are absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>N</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 11
 Investigator(s): LT/AG Section, Township, Range: S17, T145N, R82W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 3 Lat: 47.372591 Long: -101.150322 Datum: WGS 84
 Soil Map Unit Name Arnegard loam, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken in stormwater ditch to show upland status.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>60</u> x 5 = <u>300</u> Column totals <u>90</u> (A) <u>420</u> (B) Prevalence Index = B/A = <u>4.67</u>
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
1	<u>Bromus inermis</u>	<u>60</u>	<u>Y</u>	<u>UPL</u>	
2	<u>Elymus repens</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3	<u>Poa pratensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4					
5					
6					
7					
8					
9					
10					
		<u>90</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>10</u>					Hydrophytic vegetation present? <u>N</u>

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates on edges of road ditch. The bare ground is gravel surface from the existing road.

SOIL

Sampling Point: Upland 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Mottles				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F,G,H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G,H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72, 73 of LRR H)

Indicators for Problematic Hydric Soils:

- 1 cm Muck (A9) (LRR I,J)
- Moist Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- High Plains Depressions (F16) (LRR H, outside MLRA 72,73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? N

Remarks:

Soils assumed upland, but pits not excavated due to buried utilities.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | <input type="checkbox"/> Frost-Heaved Hummocks (LRR F) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | |

Check here if indicators are not present:

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): _____
 Saturation present? Yes No Depth (inches): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 5/6/21
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 12
 Investigator(s): LT/AG Section, Township, Range: S15, T145N, R82W
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): convex
 Slope (%): 3 Lat: 47.372711 Long: -101.109521 Datum: WGS 84
 Soil Map Unit Name Harriet-Regan-Stirum complex, 0 to 2 percent slopes NWI Classification: -

Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken in NWI polygon within an existing road.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1	<u>Bromus inermis</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	
2	<u>Elymus repens</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3					
4					
5					
6					
7					
8					
9					
10					
		<u>40</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>60</u>					

Hydrophytic Vegetation Indicators:
 Rapid test for hydrophytic vegetation
 Dominance test is >50%
 Prevalence index is ≤3.0*
 Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
 Problematic hydrophytic vegetation* (explain)
 *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates on edges of road ditch. The bare ground is gravel surface from the existing road.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Mottles				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u> N </u></p>
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Remarks:
 Hydric soils are likely present on either side of the existing road, but the survey corridor does not extend beyond the existing roadway.

HYDROLOGY

Wetland Hydrology Indicators:	
<p>Primary Indicators (minimum of one is required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p>Secondary Indicators (minimum of two required)</p> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)	

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u> N </u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 8/6/2021
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 13
 Investigator(s): LT/AG Section, Township, Range: S13, T145N, R82W
 Landform (hillslope, terrace, etc.): plains Local relief (concave, convex, none): none
 Slope (%): 0 Lat: 47.380775 Long: -101.078381 Datum: WGS 84
 Soil Map Unit Name Falkirk loam, 0 to 3 percent slopes NWI Classification: RS4BC
 Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Y
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Transect point taken in an NWI polygon. Area determined to be upland based on the dominance of upland vegetation and lack of hydric soils and hydrology indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>20</u> (A) <u>80</u> (B) Prevalence Index = B/A = <u>4.00</u>
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: Rapid test for hydrophytic vegetation Dominance test is >50% Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u>Bassia scoparia</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>20</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>80</u>					
Hydrophytic vegetation present? <u>N</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Upland vegetation dominates, although most natural vegetation was absent due to agricultural activities. Planted corn and soybeans appeared healthy and did not exhibit crop stress due to excessive water.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type*	Loc**		
0-6	10YR	4/3	100					Clay loam	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
---	---	--

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric soil present? <u>N</u></p>
---	---

Remarks:
Hydric soil indicators absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)
<p>Other Indicators:</p> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	

Check here if indicators are not present:

<p>Field Observations:</p> Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Indicators of wetland hydrology present? <u>N</u></p>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site Falkirk Ethanol Plant Lateral (Blue Flint Line) City/County: McLean Sampling Date: 8/6/2021
 Applicant/Owner: WBI Energy Transmission, Inc. State: ND Sampling Point: Upland 14
 Investigator(s): LT/AG Section, Township, Range: S21, T145N, R98W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
 Slope (%): 5 Lat: 47.367948 Long: -101.130490 Datum: WGS 84
 Soil Map Unit Name Williams-Bowbells loams, 0 to 3 percent slopes NWI Classification: PEM1A
 Subregion (MLRA or LRR): F Are climatic/hydrologic conditions of the site typical for this time of the year? Y
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? N
 Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transect, important features, etc.

Hydrophytic vegetation present?	<u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present?	<u>N</u>	
Indicators of wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Point taken in agricultural field. Natural vegetation present. Transect point taken in an NWI polygon. Area determined to be upland based on the general sloping topography of the area and the lack of hydric soils and wetland hydrology indicators.

VEGETATION - Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.00%</u> (A/B)
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub stratum	(Plot size: <u>15 ft</u>)				
1					
2					
3					
4					
5					
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		<u>0</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>30 ft</u>)				
1					
2					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>100</u>					

Remarks: (Include photo numbers here or on a separate sheet)
 Natural vegetation absent due to agricultural activities. Area assumed to be dominated by upland based on lack of hydric soils and wetland hydrology indicators.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Mottles				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type*	Loc**		
0-16	10YR	3/1	100					Clay loam	
16-28	10YR	3/2	100					Loam	
28-35	10YR	4/3	100					Clay	

Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR F) <input type="checkbox"/> 1 cm Muck (A9) (LRR F,G,H) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G,H) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> High Plains Depressions (F16) (MLRA 72, 73 of LRR H)	<p>Indicators for Problematic Hydric Soils:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR I,J) <input type="checkbox"/> Moist Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> High Plains Depressions (F16) (LRR H, outside MLRA 72,73) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Check here if indicators are not present:

Restrictive Layer (if observed):	Hydric soil present? <u>N</u>
Type: _____ Depth (inches): _____	

Remarks:
Hydric soil indicators absent.

HYDROLOGY

Wetland Hydrology Indicators:	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (not tilled) (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (tilled) (C3) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heaved Hummocks (LRR F)

Check here if indicators are not present:

Field Observations:	Indicators of wetland hydrology present? <u>N</u>
Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water table present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators absent.

Appendix F: OHWM Data Sheets

Other Waters Information

Stream/Waterbody Name (if known):
 Waterbody ID #: Other Water #16

Associated Wetland #:

		Other Water #: 16a,b,c		
Date: 05/06/2021	Project Name & No.: Blue Flint Ethanol Plant Lateral		Reference Pt: -	
Investigators: Luke Toso		State/County: ND/McLean		Quad Name White Butte NE
Additional Observations (continue on back if needed): Stormwater ditches associated with the existing ethanol plant. Mostly unvegetated.				
Waterbody Type	Lake <input type="checkbox"/>	Pond <input type="checkbox"/>	Borrow Pit <input type="checkbox"/>	River <input type="checkbox"/>
	Stream <input type="checkbox"/>	Other <input checked="" type="checkbox"/>		
Subsurface Flow?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unknown <input type="checkbox"/>	
Flow Type	PHYSICAL ATTRIBUTES			
	Perennial (Flows year round) <input type="checkbox"/>		Intermittent (Flows <3 months) <input type="checkbox"/>	
	Seasonal (Continuous flow ≥ 3 months) <input type="checkbox"/>		Ephemeral (Flows only in response to rainfall) <input checked="" type="checkbox"/>	
Stream Width @ OHWM (ft.)	0 - 1 <input type="checkbox"/>	1 - 3 <input type="checkbox"/>	3 - 6 <input checked="" type="checkbox"/>	6 - 9 <input type="checkbox"/>
	9+ <input type="checkbox"/>			
Water Depth - Current (ft.)	0 - 1 <input type="checkbox"/>	1 - 3 <input type="checkbox"/>	3 - 6 <input checked="" type="checkbox"/>	6 - 9 <input type="checkbox"/>
	9+ <input type="checkbox"/>			
OHWM Indicator (check all applicable)	Natural Line Impress on bank <input checked="" type="checkbox"/> Sediment Sorting <input type="checkbox"/> Shelving <input type="checkbox"/> Litter disturbed or washed away <input type="checkbox"/> Changes in Character of Soil <input type="checkbox"/> Scour <input type="checkbox"/> Destruction of Terrestrial Vegetation <input type="checkbox"/> Deposition <input type="checkbox"/> Presence of litter or debris <input type="checkbox"/> Multiple Observed Flow Events <input type="checkbox"/> Wracking <input type="checkbox"/> Bed & Bank <input type="checkbox"/> Vegetation Matted Down, Bent, or Absent <input type="checkbox"/> Water Staining <input type="checkbox"/> Change in plant community <input checked="" type="checkbox"/> Not Present <input type="checkbox"/>			
Channel Height (ft.) <small>(OHWM to channel bottom looking downstream)</small>	Left:		Right:	
	0 - 2 <input checked="" type="checkbox"/>	2 - 4 <input type="checkbox"/>	0 - 2 <input checked="" type="checkbox"/>	2-4 <input type="checkbox"/>
	4+ <input type="checkbox"/>		4+ <input type="checkbox"/>	
Stream Substrate %	Silts 80%	Cobbles	Bedrock	Sands 20%
	Concrete	Muck	Vegetation	Gravel
	Other - Explain:			
Aquatic Habitats	Sand Bar <input type="checkbox"/>	Gravel Riffles <input type="checkbox"/>	In-stream Emergent Plants <input type="checkbox"/>	
	Gravel Bar <input type="checkbox"/>	Deep Pools <input type="checkbox"/>	In-stream Submerged Plants <input type="checkbox"/>	
	Mud Bar <input type="checkbox"/>	Bank Root Systems <input type="checkbox"/>	Fringing Wetlands <input type="checkbox"/>	
	Undercut Banks <input type="checkbox"/>	Overhanging Trees/Shrubs <input type="checkbox"/>		
Stream is:	Natural <input type="checkbox"/>	Artificial (Man-Made) <input checked="" type="checkbox"/>	Manipulated <input type="checkbox"/>	
LAKES AND OTHER DEEPWATER HABITAT				
Shoreline Type:	Silts <input type="checkbox"/>	Cobbles <input type="checkbox"/>	Bedrock <input type="checkbox"/>	Concrete <input type="checkbox"/>
	Muck <input type="checkbox"/>	Vegetation <input type="checkbox"/>		
Other (explain):				

Additional Observations Continued :

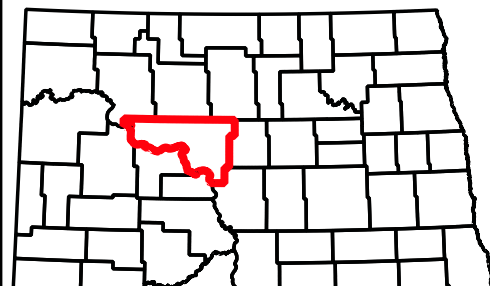
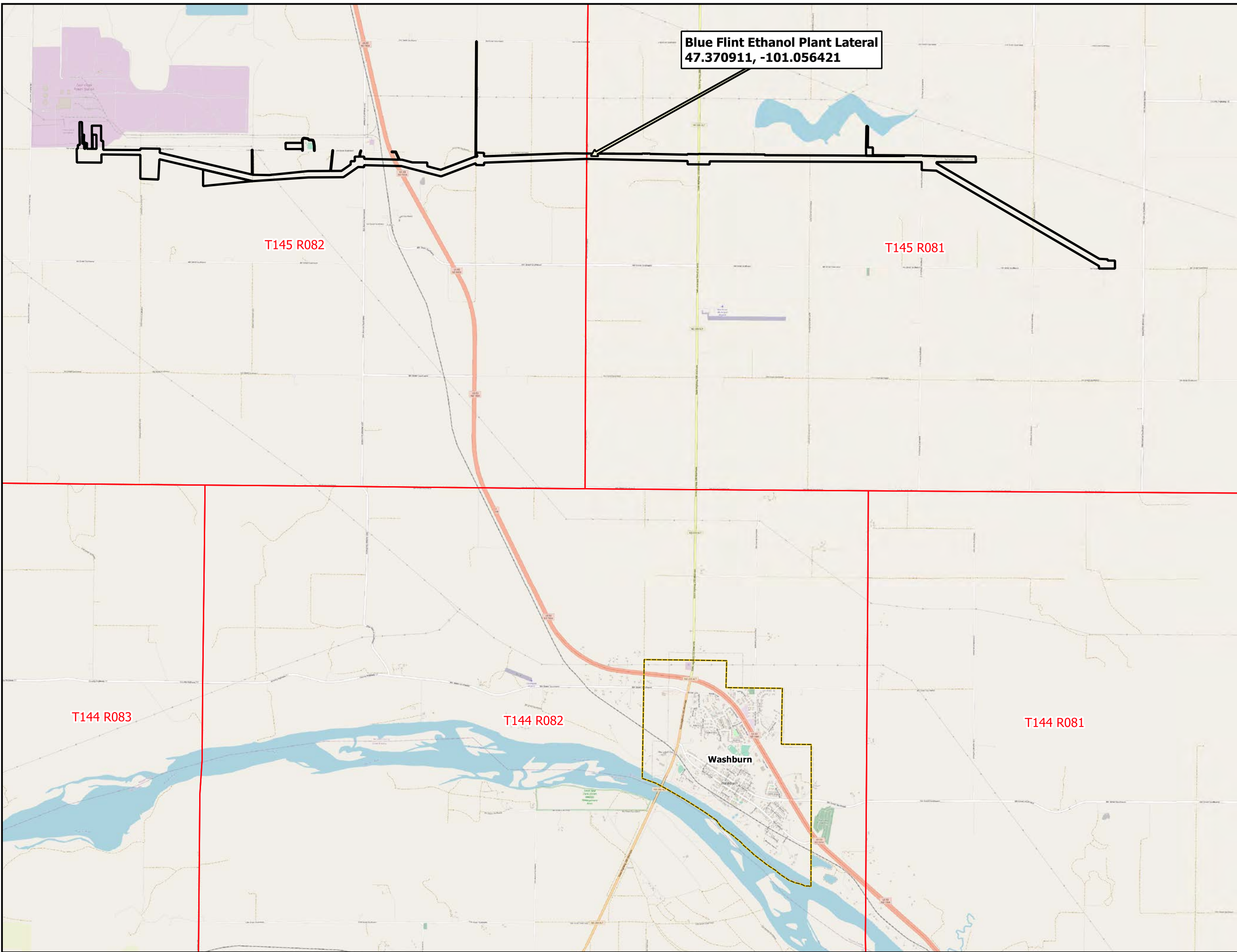
Appendix G: Property Access Statement

Property Access Statement



WBI Energy continually coordinates with landowners along the proposed route through pipeline project planning, construction and operation. Should U.S. Army Corps of Engineers personnel require access to specific properties to observe aquatic resources, WBI Energy will coordinate with landowner as necessary to provide for that access. Please contact Robbyn Reukauf to arrange access by email at Robbyn.Reukauf@WBIEnergy.com or phone by calling (406) 359-7295.

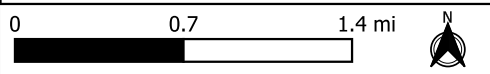
Appendix H: Aquatic Resource Excel Sheet

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
Upland 01	North Dakota	U		Area	N/A	ACRE	UPLAND	47.361939	-100.969692	
Upland 02	North Dakota	U		Area	N/A	ACRE	UPLAND	47.365142	-100.977862	
Upland 03	North Dakota	U		Area	N/A	ACRE	UPLAND	47.368942	-100.987477	
Upland 04	North Dakota	U		Area	N/A	ACRE	UPLAND	47.370986	-101.005743	
Upland 05	North Dakota	U		Area	N/A	ACRE	UPLAND	47.371047	-101.012408	
Upland 06	North Dakota	U		Area	N/A	ACRE	UPLAND	47.370637	-101.015489	
Upland 07	North Dakota	U		Area	N/A	ACRE	UPLAND	47.371373	-101.023362	
Upland 08	North Dakota	U		Area	N/A	ACRE	UPLAND	47.371243	-101.059661	
Upland 09	North Dakota	U		Area	N/A	ACRE	UPLAND	47.369637	-101.082923	
Upland 10	North Dakota	U		Area	N/A	ACRE	UPLAND	47.370192	-101.092361	
Upland 11	North Dakota	U		Area	N/A	ACRE	UPLAND	47.372490	-101.150278	
Upland 12	North Dakota	U		Area	N/A	ACRE	UPLAND	47.372680	-101.109461	
Upland 13	North Dakota	U		Area	N/A	ACRE	UPLAND	47.380775	-101.078381	
Upland 14	North Dakota	U		Area	N/A	ACRE	UPLAND	47.367948	-101.130490	
Wetland 01	North Dakota	PEM1C		Area	0.076	ACRE	ISOLATE	47.363984	-100.973978	
Wetland 02	North Dakota	PEM1C		Area	0.418	ACRE	ISOLATE	47.367480	-100.983631	
Wetland 03	North Dakota	PEM1C		Area	0.254	ACRE	ISOLATE	47.370999	-100.989829	
Wetland 04	North Dakota	PEM1C		Area	4.404	ACRE	ISOLATE	47.371207	-101.002606	
Wetland 05	North Dakota	L2ABG		Area	0.144	ACRE	RPW	47.375207	-101.003295	
Wetland 06	North Dakota	PEM1C		Area	0.784	ACRE	NRPW	47.371087	-101.050026	
Wetland 07	North Dakota	PEM1C		Area	0.309	ACRE	RPW	47.371005	-101.053139	Buffalo Creek
Wetland 08	North Dakota	PEM1A		Area	0.616	ACRE	ISOLATE	47.371019	-101.061901	
Wetland 09	North Dakota	PEM1A		Area	0.249	ACRE	NRPW	47.368862	-101.085029	
Wetland 10	North Dakota	PEM1A		Area	0.064	ACRE	ISOLATE	47.369933	-101.096021	
Wetland 11a	North Dakota	PEM1A		Area	0.079	ACRE	RPW	47.370437	-101.097714	
Wetland 11b	North Dakota	PEM1A		Area	0.053	ACRE	RPW	47.370421	-101.098897	
Wetland 11c	North Dakota	PEM1A		Area	0.609	ACRE	RPW	47.369915	-101.099153	
Wetland 11d	North Dakota	PEM1A		Area	1.110	ACRE	RPW	47.370161	-101.100001	
Wetland 12	North Dakota	PEM1C		Area	0.113	ACRE	ISOLATE	47.369728	-101.102127	
Wetland 13a	North Dakota	PEM1C		Area	2.178	ACRE	RPW	47.368431	-101.104950	
Wetland 13b	North Dakota	PEM1C		Area	4.977	ACRE	RPW	47.368361	-101.109428	
Wetland 13c	North Dakota	PEM1C		Area	4.067	ACRE	RPW	47.368156	-101.114800	
Wetland 14	North Dakota	PEM1C		Area	0.435	ACRE	ISOLATE	47.369510	-101.131027	
Wetland 15	North Dakota	PEM1A		Area	0.189	ACRE	RPW	47.369676	-101.154466	
Other Water 16a	North Dakota	R4SB		Area	0.233	ACRE	NRPW	47.374001	-101.153805	
Other Water 16b	North Dakota	R4SB		Area	0.184	ACRE	NRPW	47.372665	-101.153758	
Other Water 16c	North Dakota	R4SB		Area	0.204	ACRE	NRPW	47.371926	-101.153819	
Wetland 17	North Dakota	PEM1A		Area	1.726	ACRE	ISOLATE	47.368039	-101.130437	
Wetland 18	North Dakota	PEM		Area	0.650	ACRE	ISOLATE	47.37096900	-101.07780400	



McLean County, North Dakota

-  Survey Area
-  Townships



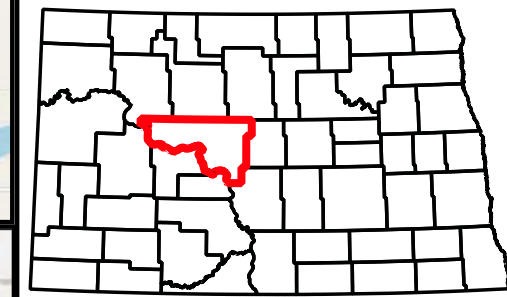
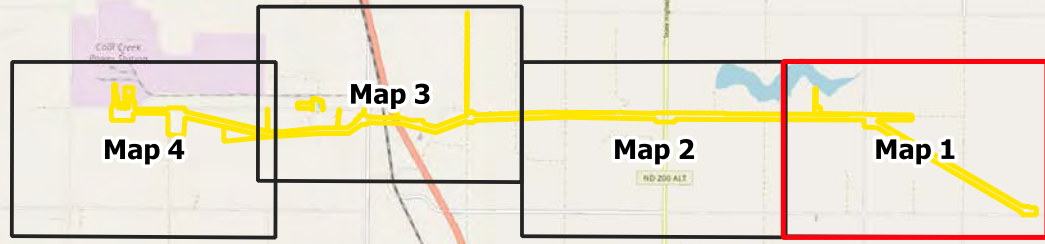
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 Background Imagery: 2020 Aerial Image (NAIP)



VICINITY MAP

Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.

Exhibit 2



McLean County, North Dakota

- Transect Points
- ▭ Aquatic Resources
- ▭ NWI
- Stream (USGS NHD)
- ▭ Sections
- ▭ Survey Area

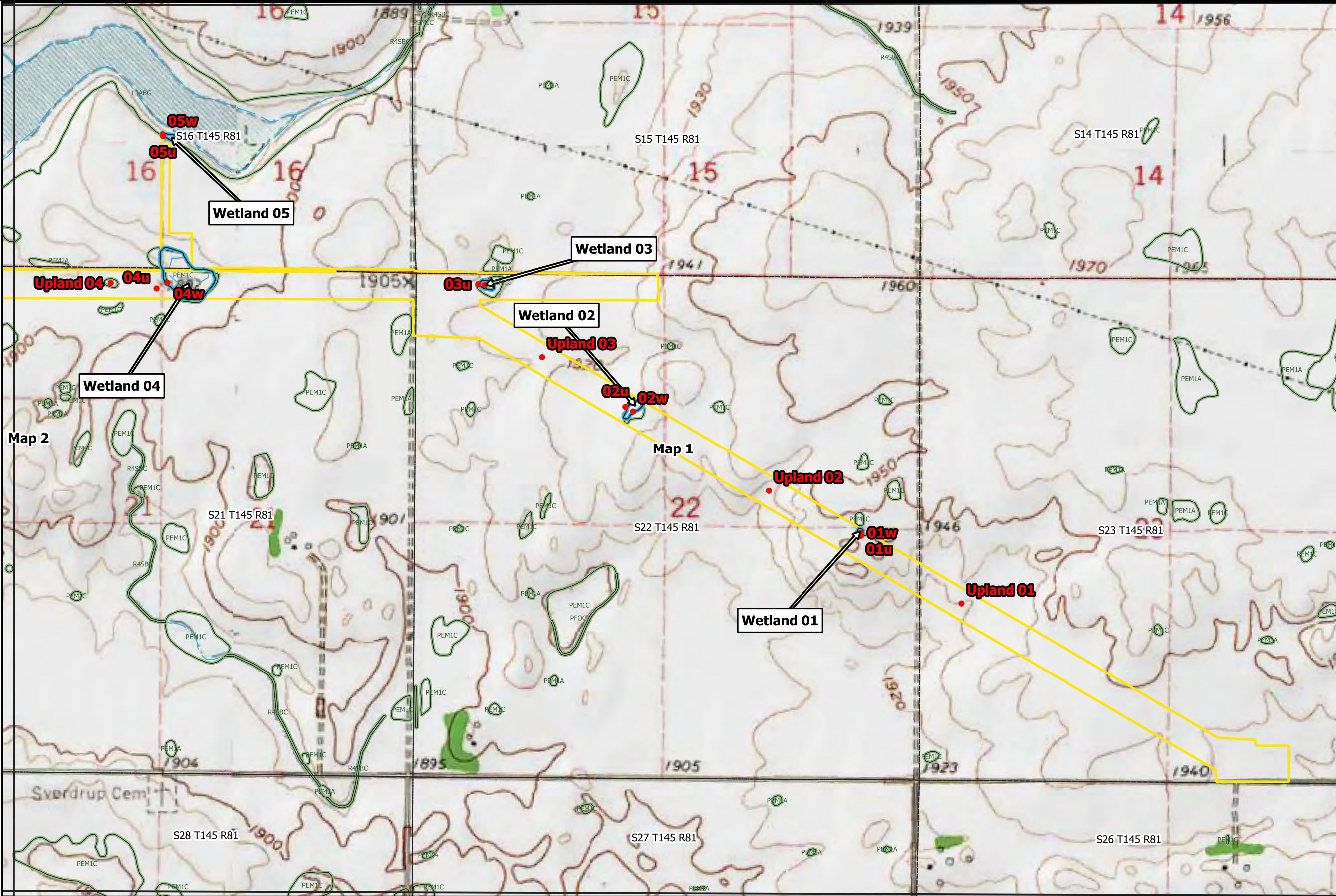
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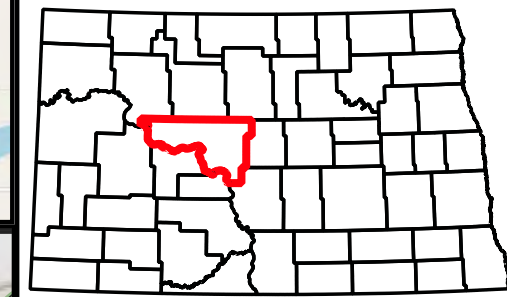
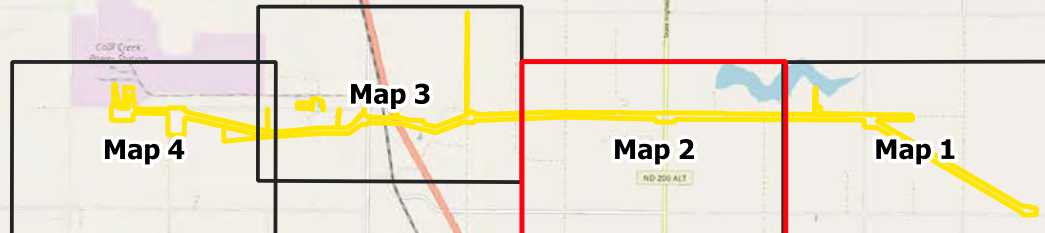


USGS TOPO MAP

Blue Flint Ethanol Plant
 Lateral
 WBI Energy, Inc.

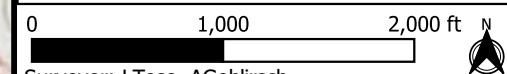
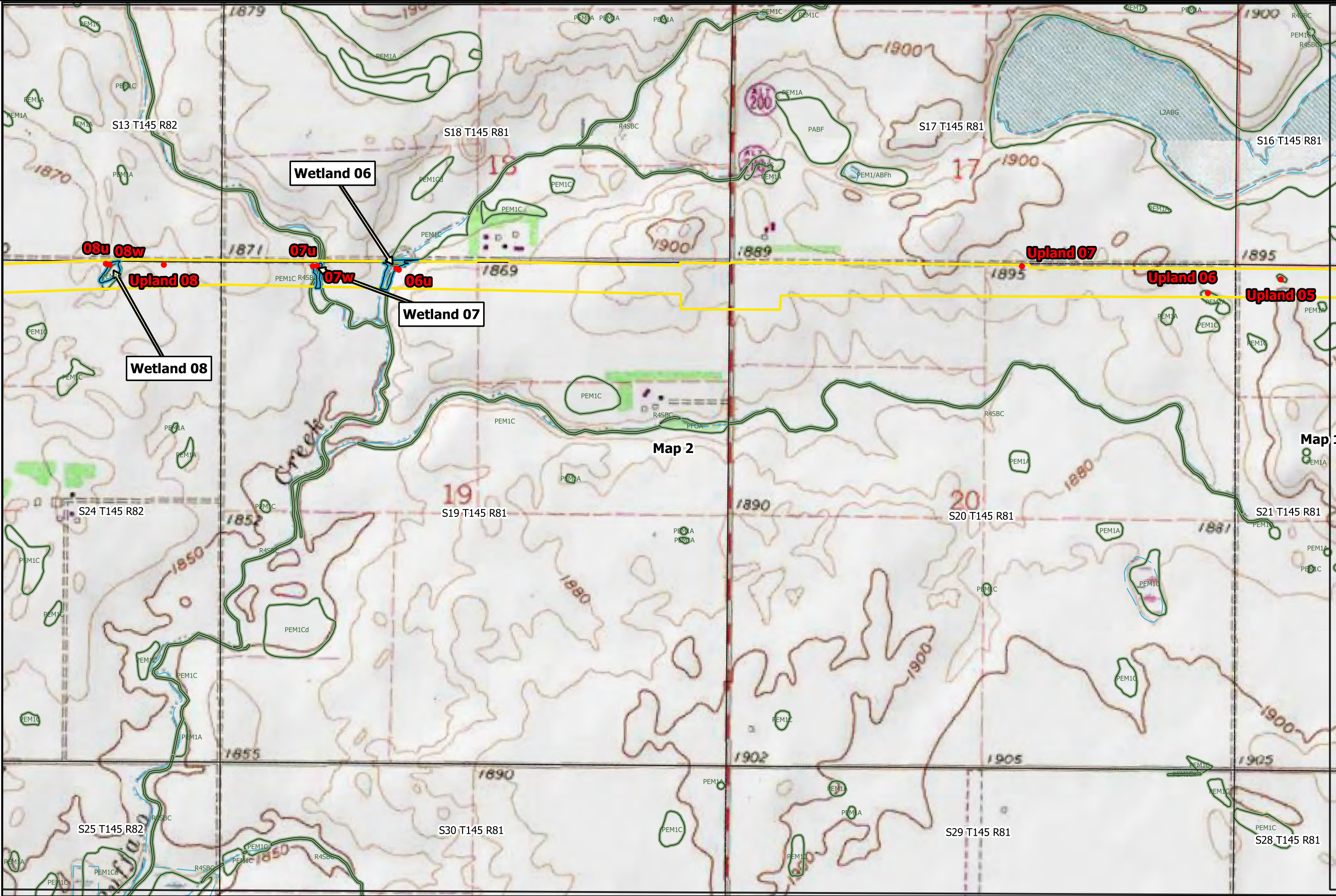
Exhibit 3
 Map 1 of 4





McLean County, North Dakota

- Transect Points
- Aquatic Resources
- NWI
- Stream (USGS NHD)
- Sections
- Survey Area



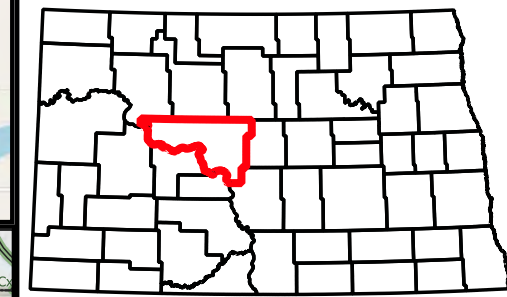
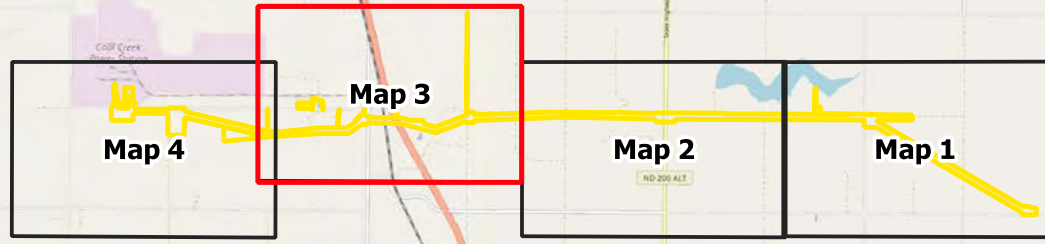
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 Background Imagery: USGS 7.5" Topo Maps: Turtle Creek SW, Washburn, Washburn SW



USGS TOPO MAP

Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.

Exhibit 3
Map 2 of 4



McLean County, North Dakota

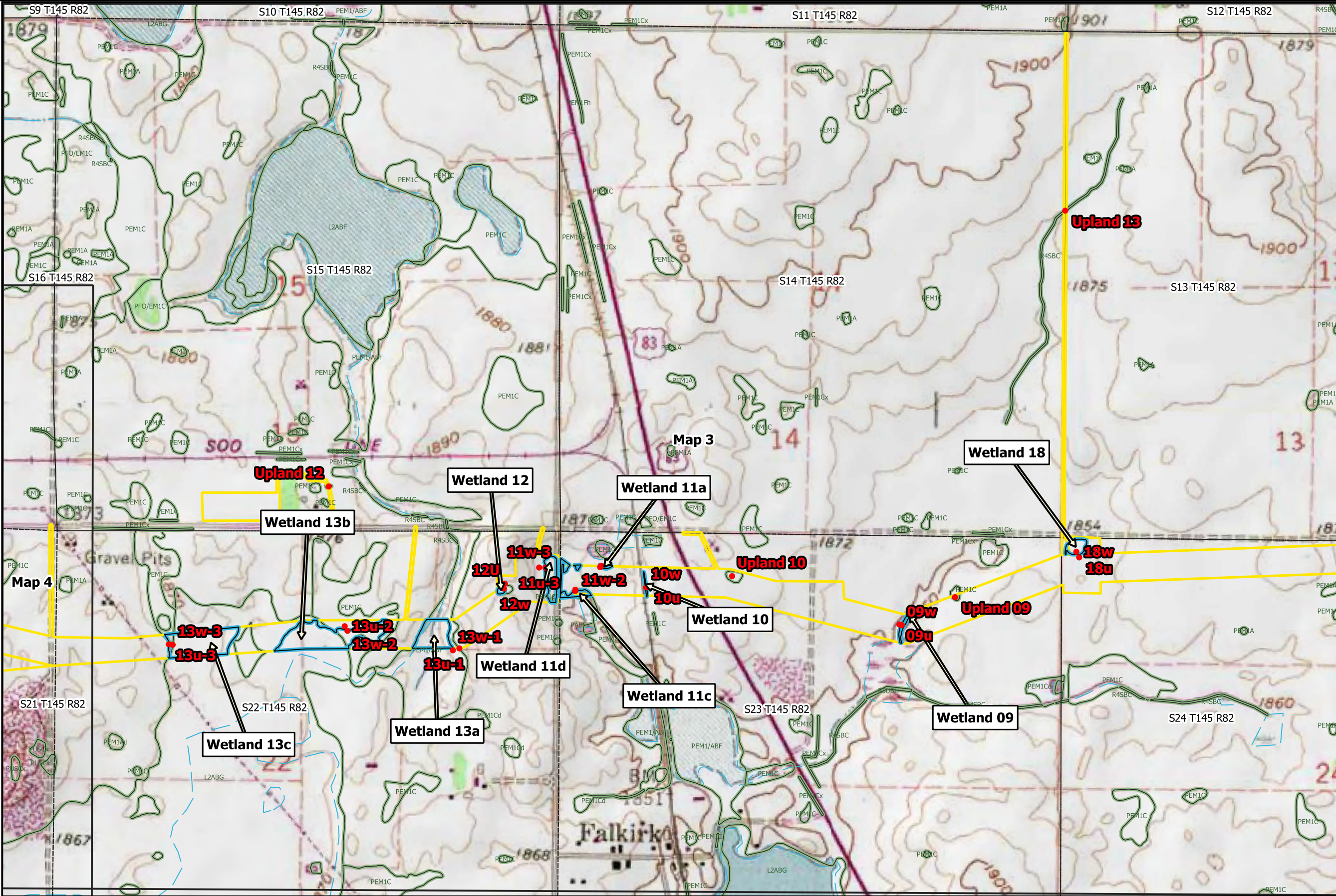
- Transect Points
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- ▭ NWI
- Stream (USGS NHD)
- ▭ Sections
- ▭ Survey Area

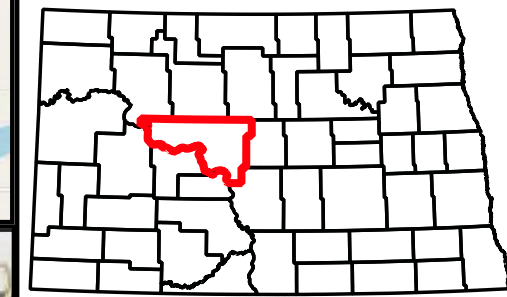
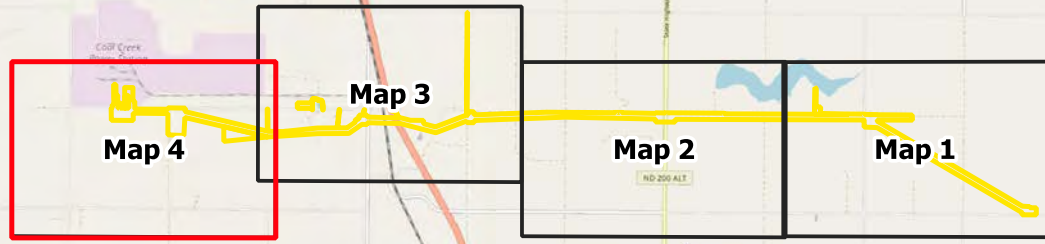
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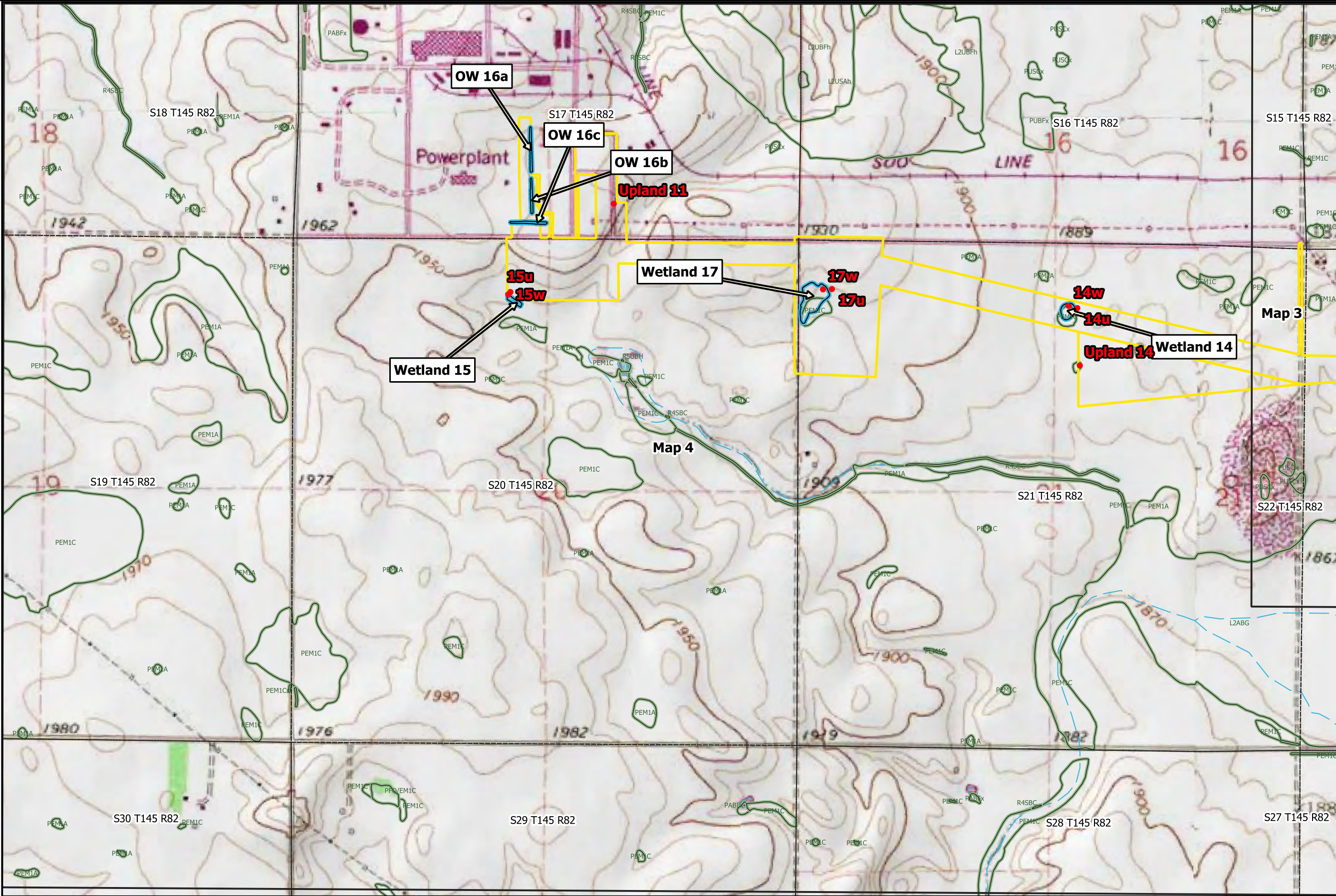
USGS TOPO MAP
Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.

Exhibit 3
Map 3 of 4

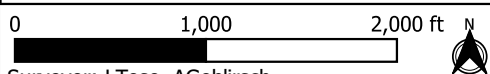




McLean County, North Dakota



- Transect Points
- Aquatic Resources
- NWI
- Stream (USGS NHD)
- Sections
- Survey Area



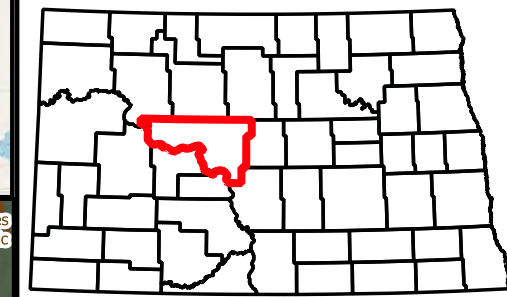
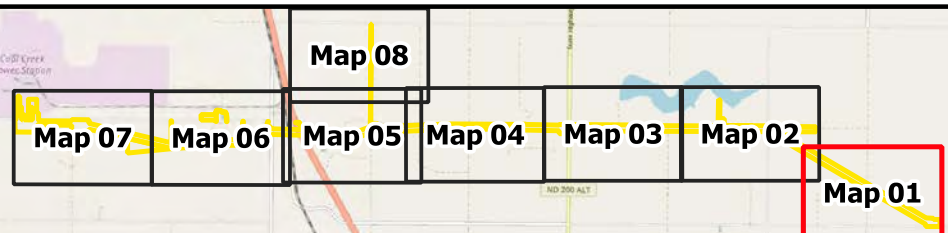
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USGS TOPO MAP

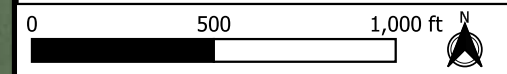
Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.

Exhibit 3
Map 4 of 4



McLean County, North Dakota

- Transect Points
- Aquatic Resources
- Field Survey Area
- Soil Map Units

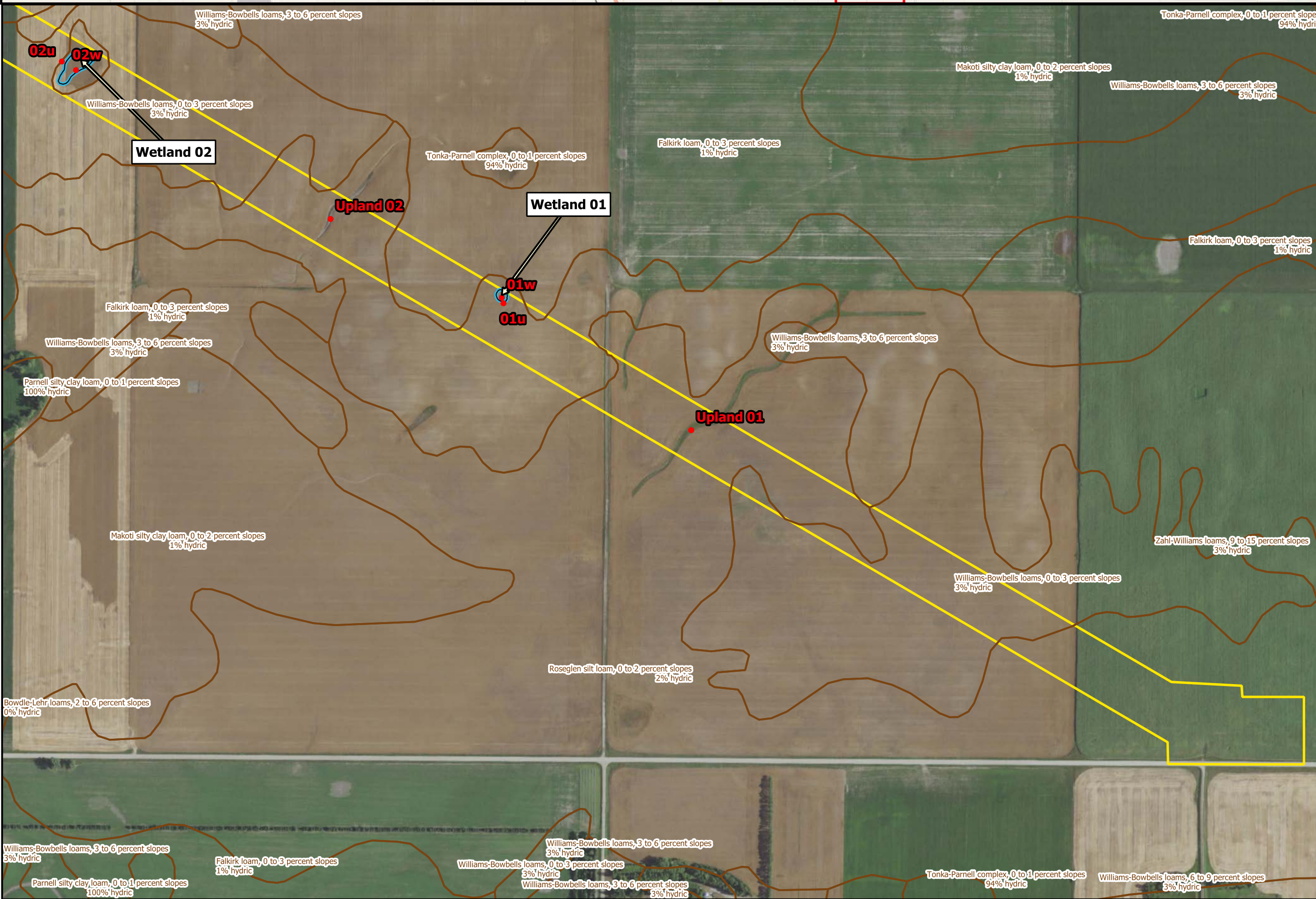


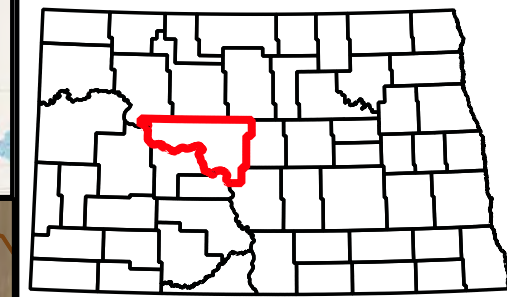
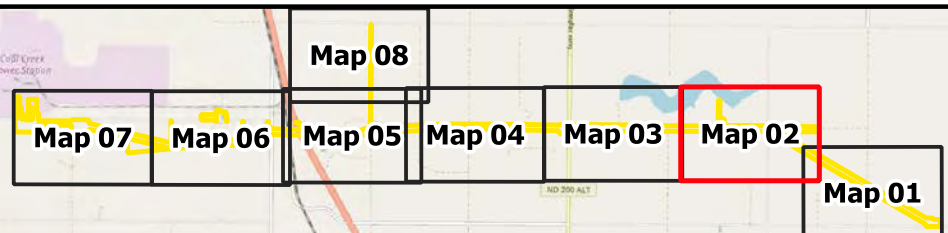
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HYDRIC RATING BY MAP UNIT
UNIT
Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.

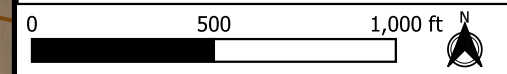
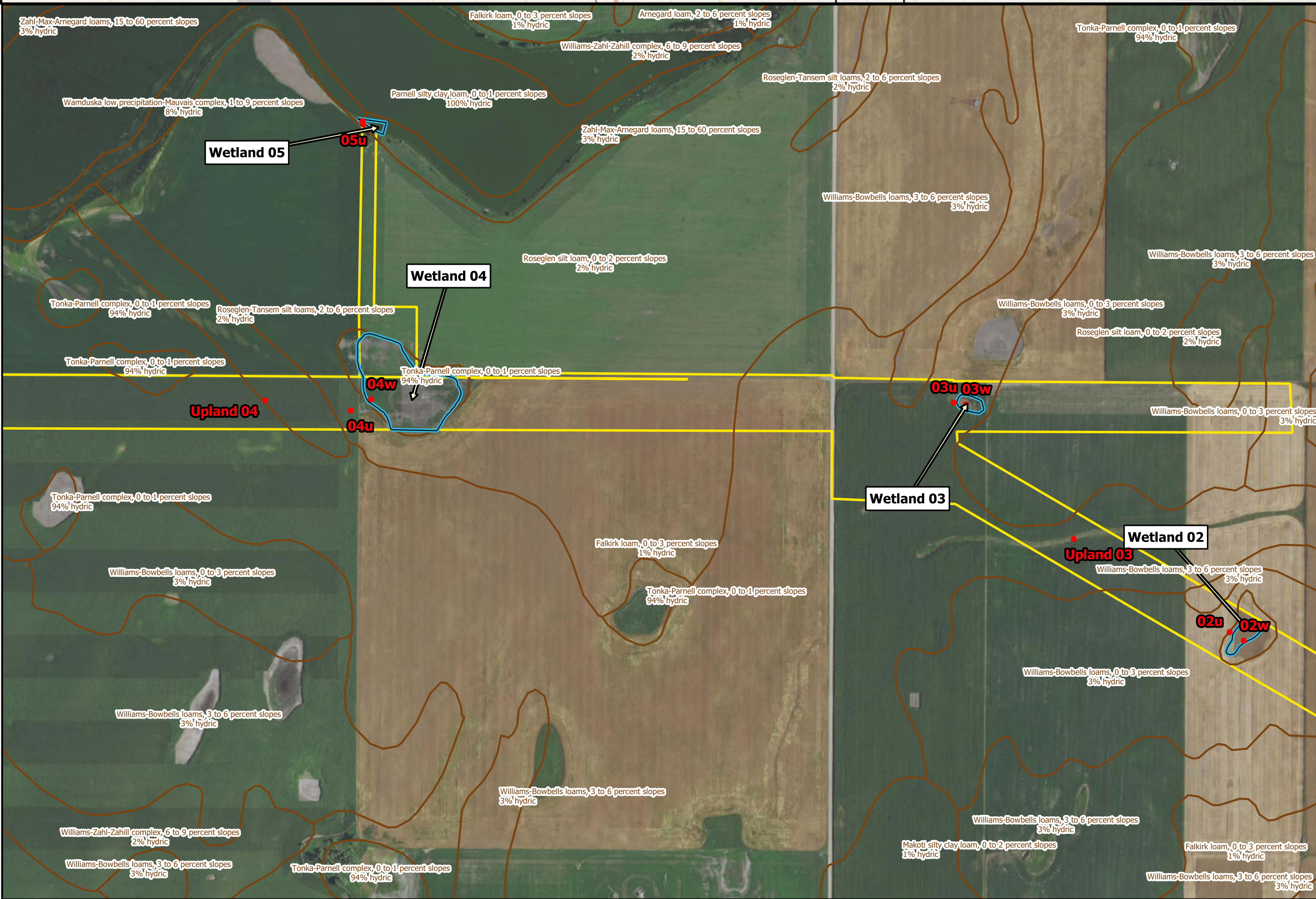
Exhibit 4
Map 01 of 08





McLean County, North Dakota

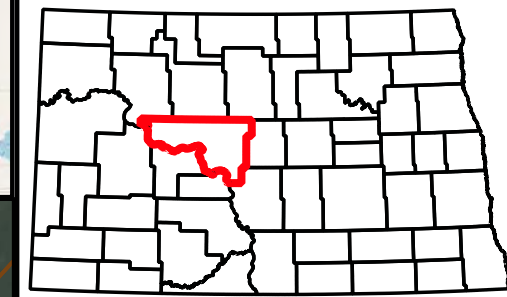
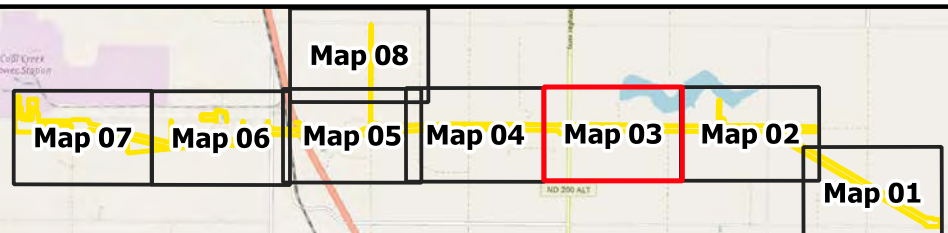
- Transect Points
- Aquatic Resources
- Field Survey Area
- Soil Map Units



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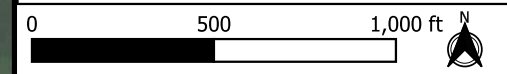
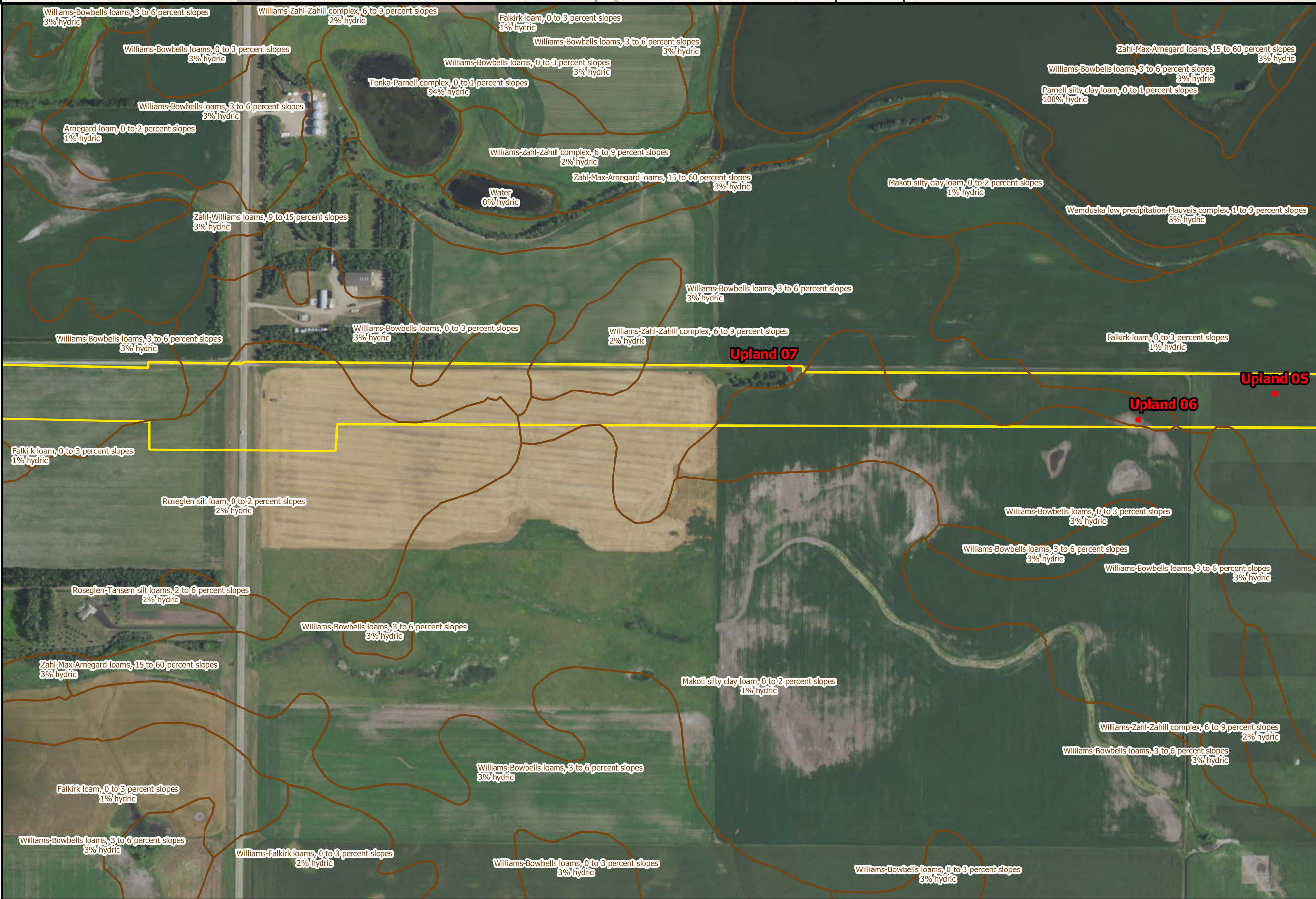


HYDRIC RATING BY MAP UNIT
Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.



McLean County, North Dakota

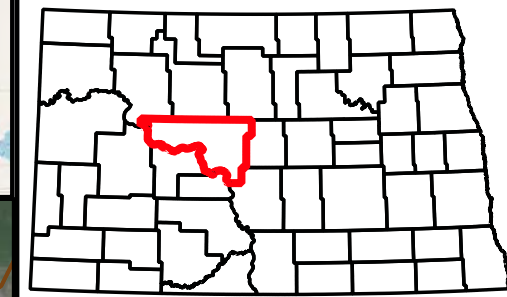
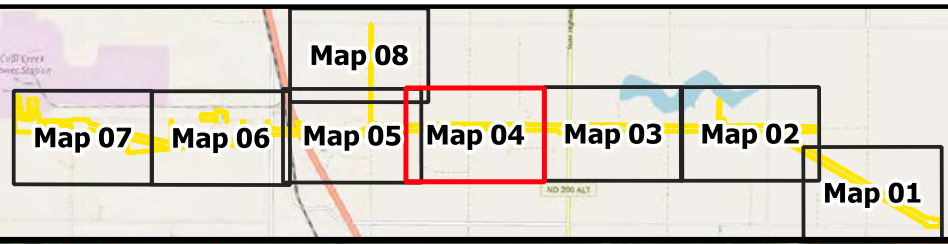
- Transect Points
- Aquatic Resources
- Field Survey Area
- Soil Map Units



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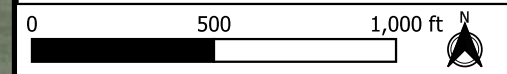
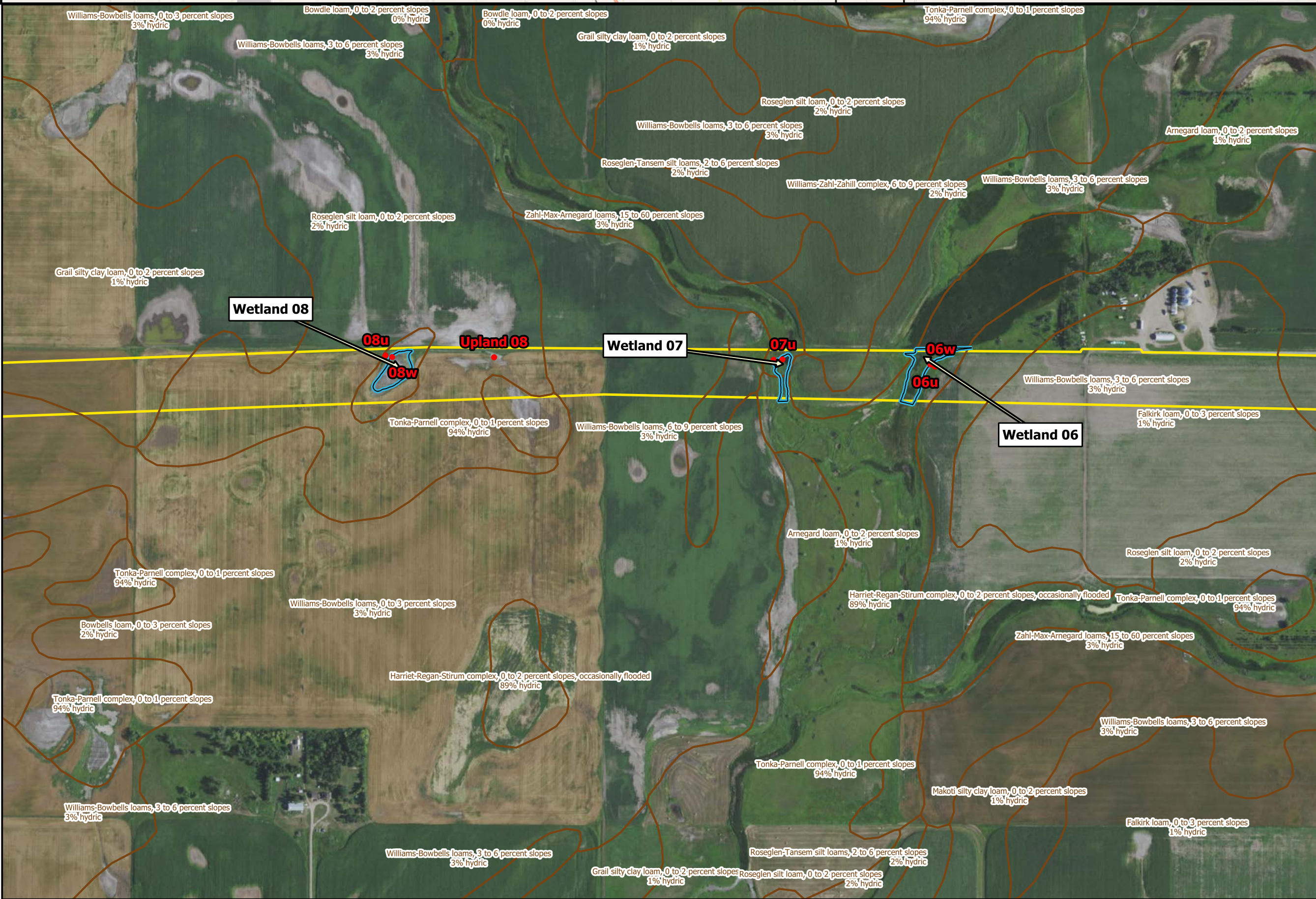


HYDRIC RATING BY MAP UNIT
Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.



McLean County, North Dakota

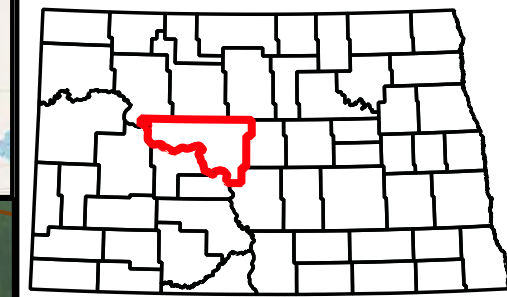
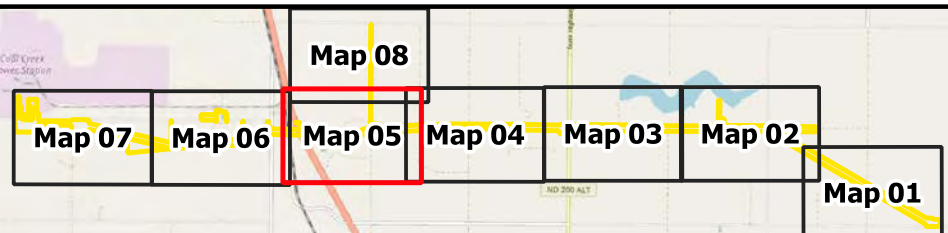
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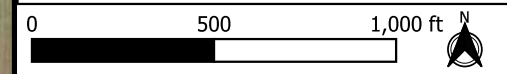
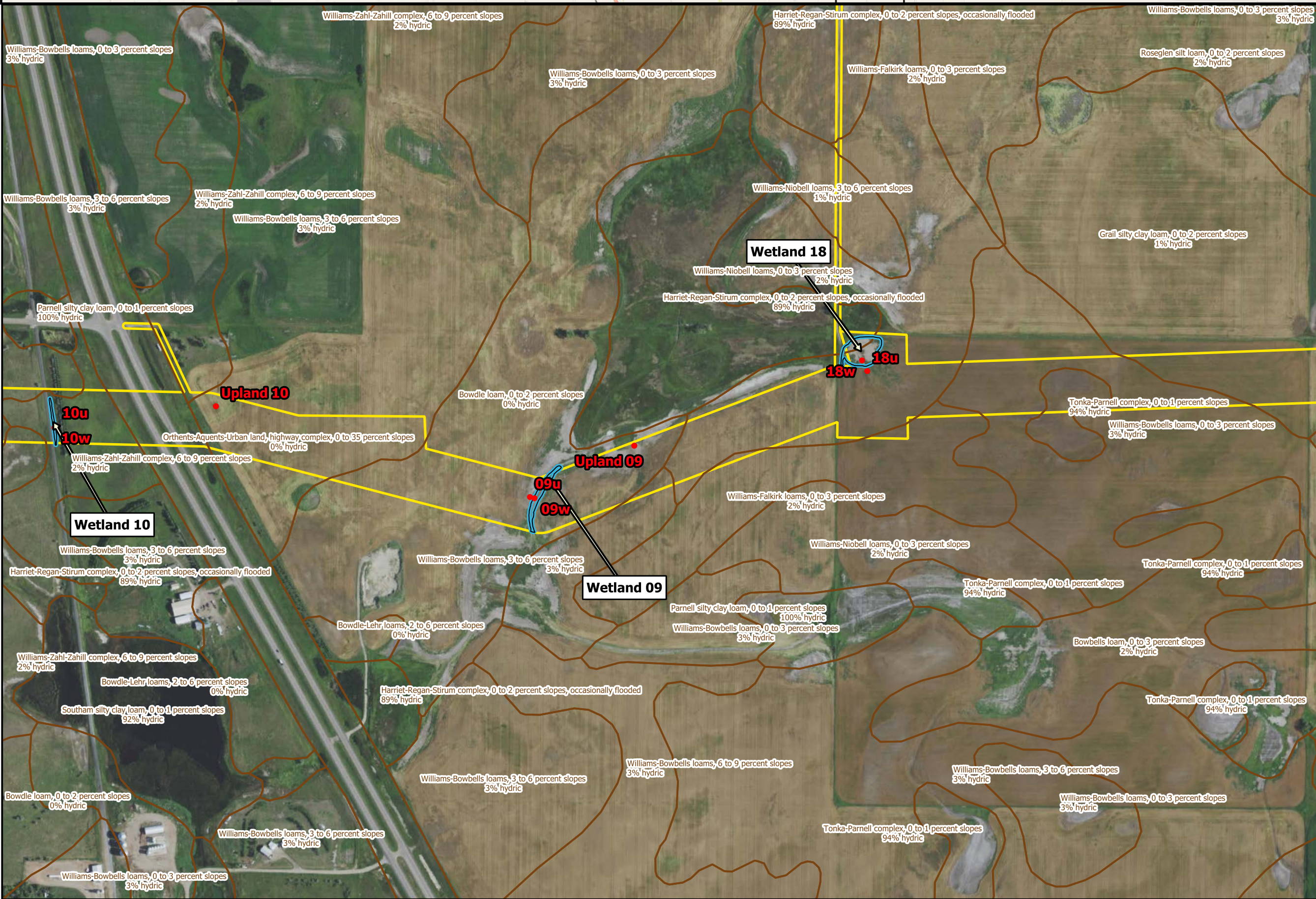


HYDRIC RATING BY MAP UNIT
Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.



McLean County, North Dakota

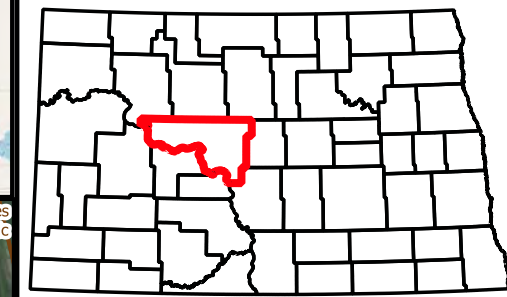
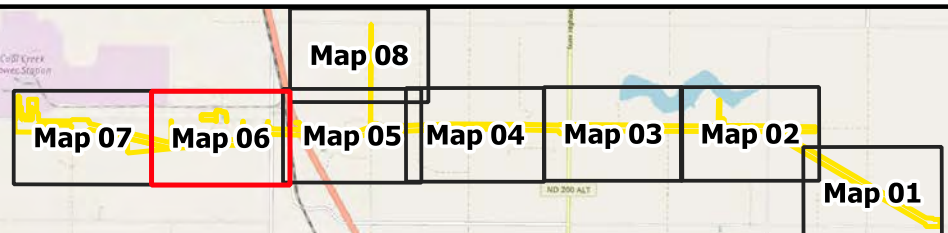
- Transect Points
- Aquatic Resources
- Field Survey Area
- Soil Map Units



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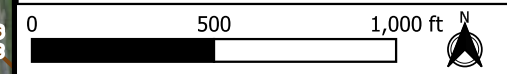
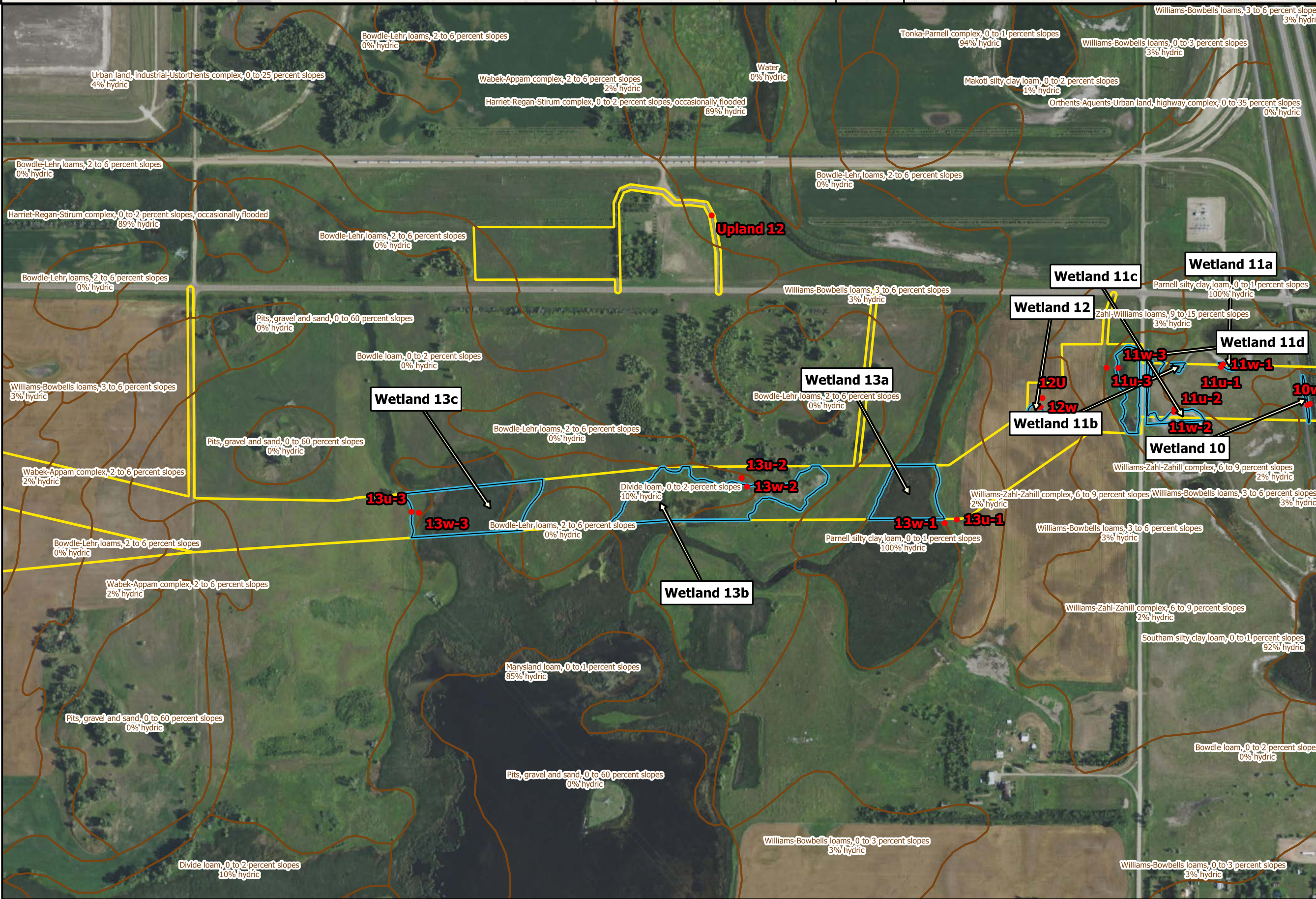


HYDRIC RATING BY MAP UNIT
UNIT
Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.



McLean County, North Dakota

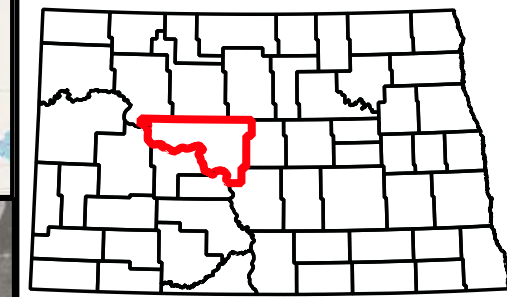
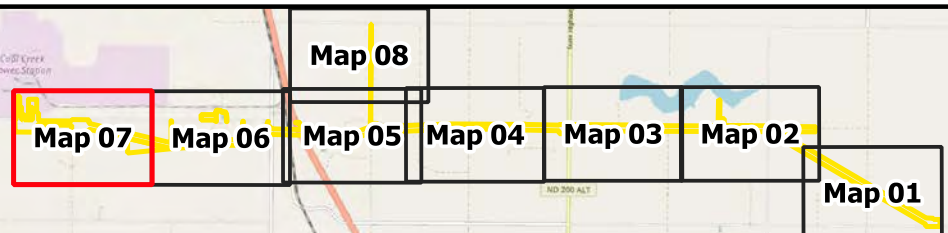
- Transect Points
- Aquatic Resources
- Field Survey Area
- Soil Map Units



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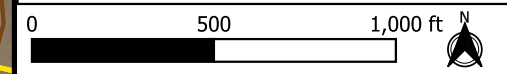
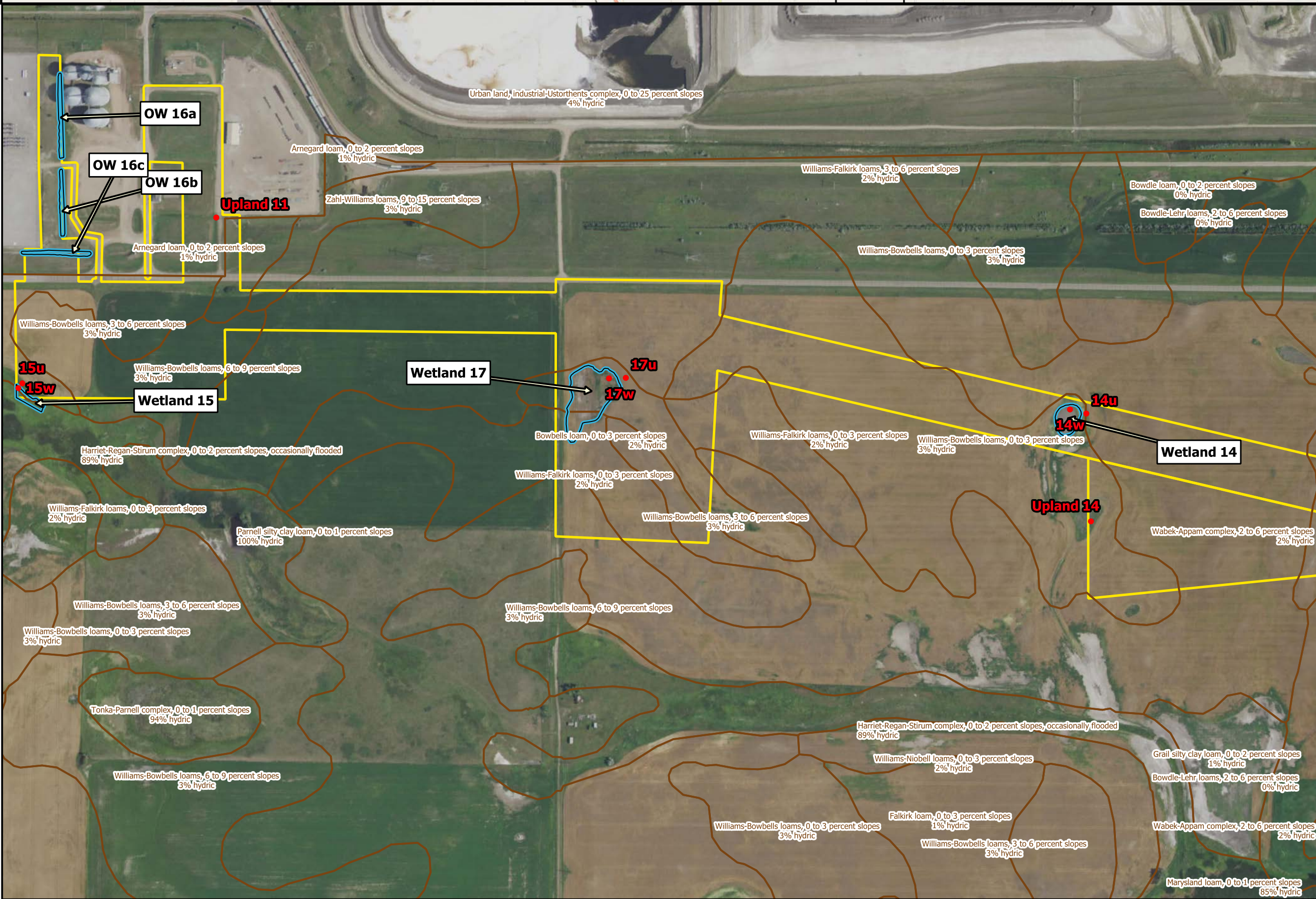


HYDRIC RATING BY MAP UNIT
UNIT
Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.



McLean County, North Dakota

- Transect Points
- Aquatic Resources
- Field Survey Area
- Soil Map Units

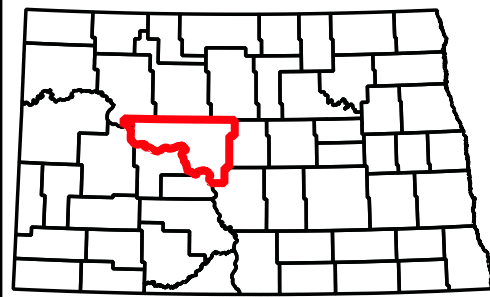
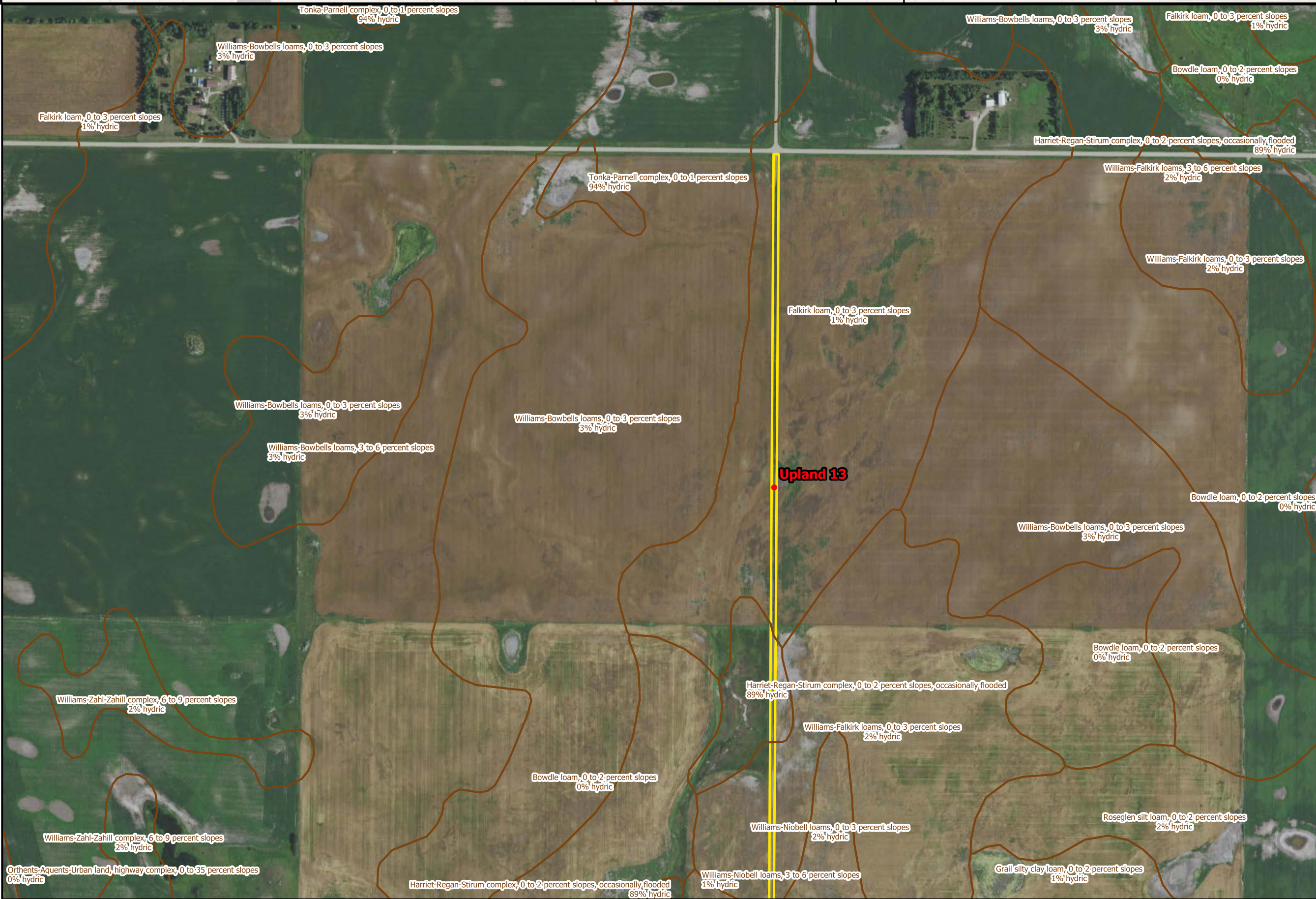
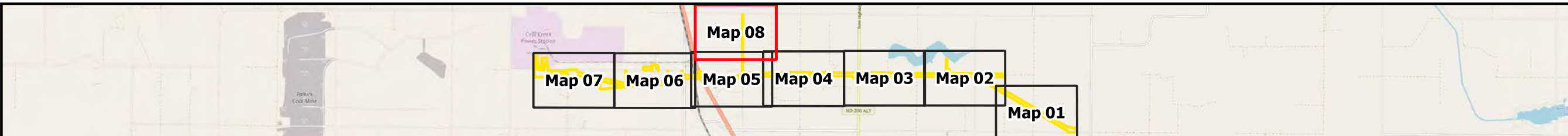


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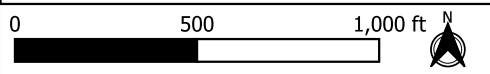
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Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.

Exhibit 4
Map 07 of 08



McLean County, North Dakota

- Transect Points
- Aquatic Resources
- Field Survey Area
- Soil Map Units



Surveyor: LToso, AGoblirsch
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 Background Imagery: 2020 Aerial Image (NAIP)



HYDRIC RATING BY MAP UNIT
UNIT
Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.

Exhibit 4
Map 08 of 08

Volume II

Appendix P

Blue Flint Ethanol Plant Lateral Biological Assessment Report

BLUE FLINT ETHANOL PLANT LATERAL
Biological Assessment



Prepared For:
WBI Energy Transmission, Inc.



Beaver Creek
ENVIRONMENTAL

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Introduction

WBI Energy Transmission, Inc. (WBI) is proposing to construct approximately 10 miles of 8-inch lateral pipeline from its existing Line Section 7 main line to Midwest AgEnergy's Blue Flint ethanol plant. The purpose of the project is to provide natural gas service to the ethanol plant so it can convert from coal to natural gas power generation. The Project is defined as the construction and operation of the proposed pipeline, and the Project area is defined as the area needed to construct the Project. The Project would be under the jurisdiction of the Federal Energy Regulatory Commission (FERC).

WBI contracted Beaver Creek, Inc. to complete natural resources surveys for the Project. These surveys and this report have been completed for the proposed Project to comply with Section 7 Threatened and Endangered Species Consultation under the Endangered Species Act (ESA), the Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act.

Project Description

The Project is in McLean County, North Dakota approximately 8 miles north of Washburn, North Dakota. The project is centered 47.371019, -101.052425 and the survey area is in the following sections:

- Portions of Section 16, 19, 20, 21, 22, 23 Township 145 North, Range 81 West.
- Portions of Section 15, 17, 20, 21, 22, 23, 24 Township 145 North, Range 82 West.

Construction of the Project is planned for early 2022. It would be built using the following steps, detailed below:

- Site preparation: survey and staking, clearing and grading
- Pipeline installation: pipe stringing, bending, welding, trenching, and lowering in, as well as use of specialized installation methods such as the guided bore method
- Backfilling and hydrostatic testing; and
- Right-of-way (ROW) cleanup and restoration

Site Preparation

The limits of approved work areas (ROW and workspaces), the pipeline centerline, existing utility lines, and sensitive areas (e.g. wetland boundaries, cultural sites, and sensitive habitat) would be marked prior to construction for avoidance.

The construction ROW would be cleared and graded (where necessary) to provide a relatively level surface for construction equipment. Vegetation would be mowed and cleared to the edge of the work area in grassland areas where grading is not required. Vegetation would not be cleared within areas that would be crossed by guided bore methods. Construction equipment and materials would be staged within approved workspace areas or at designated pipe laydown yard locations. Access to project workspaces would take place on existing public and private access roads, and equipment would travel within approved workspace areas along the pipeline ROW.

Pipeline Installation

After clearing and grading, individual joints of pipe would be transported to the Project area and strung along the ROW in a single, continuous line. Pipe bending would be done where necessary to conform to topography. The pipe would be welded to join the sections of the pipe into one continuous length. Pipe bends and welds would be done according to applicable standards and would be inspected for defects or damage and repaired before being placed in the trench. Specialized coating for underground pipelines and cathodic protection systems would be installed on the pipeline to prevent external corrosion.

Most of the Project would be constructed using the open trench method. Trenches would be excavated with a trackhoe or excavator to a depth of approximately five feet to allow for pipe installation and a four foot cover depth. The trench would measure approximately two-three feet wide. Topsoil and subsoil would be removed and stored in segregated spoil piles along the construction ROW. To reduce erosion, temporary erosion controls would be installed as needed and maintained throughout construction. A series of side-boom tractors would simultaneously lift welded sections of the pipe and carefully lower the sections into the trench.

Certain road crossings and wetland and waterbody features would be installed using the guided bore methodology. This trenchless pipeline installation method involves drilling a hole under the features to be crossed and then pulling a pre-welded pipe section back through the drilled path. Entry and exit holes would be excavated at either end of the bore path to control and guide the pipe installation and contain drilling fluids. Once the bore hole has been successfully drilled and is stable, the welded pipe (aka the drill string) is pulled through the hole.

Backfilling and Hydrostatic Testing

After the pipeline is placed in the trench, soil would be backfilled with subsoil followed by topsoil. Trench plugs, a permanent erosion control feature, may be placed within the pipeline excavation on slopes greater than 5% to reduce erosion in the trench and prevent the trench from becoming a subsurface drainage path. Once backfilled, the entire length of the pipeline would be hydrostatically tested according to federal requirements before being placed into service. WBI Energy is proposing to utilize water from nearby surface waters to complete hydrostatic testing; however, municipal water sources may be utilized as an alternative option. Hydrostatic test water would be discharged in approved areas according to applicable permits.

Reclamation

Restoration of the ROW would occur following pipeline installation. Permanent surface erosion control measures, including, but not limited to, permanent slope breakers, erosion control matting, and riprap would be installed as necessary within the ROW. Pipeline markers and security fencing would be installed as required. The Project area would be seeded with a Natural Resource Conservation Service (NRCS) or landowner-recommended seed mix and approved by the landowner prior to seeding.

The Project area would be monitored routinely for erosion, subsidence, noxious weeds, and vegetation establishment until successful restoration has been achieved. Reclamation is typically

considered successful when seeded areas are established; adjacent vegetative communities spread back into the disturbed areas; and noxious weeds are under control.

Methods

Definitions

Environmental surveys were conducted at two different spatial levels: the action area, and environmental survey area. The action area is a one-mile radius from the proposed Project and associated workspaces. This was used to survey for eagle nests (**Figure 2**). Existing access roads and trails used for Project access were not included in the action area buffer for eagle nests. The environmental survey area included a 300-foot-wide corridor centered on the proposed pipeline centerline; a 30-foot-wide corridor centered on proposed access road centerlines; and workspace limits for laydown yards and bore pullback areas. The Project area is defined as the area needed to construct the project, which would include a 75ft wide construction corridor, with additional temporary workspaces. The Project area is entirely within the environmental survey area.

Desktop Review

Prior to field surveys, the action area was evaluated via desktop methods. Statewide aerial photography and US Geological Survey (USGS) Topographic Maps were reviewed to determine current and historic land use. These data provided background information for the field survey.

Field Survey Methods

Field surveys were conducted by Luke Toso, Botanist/Wildlife Biologist, on May 5 and May 6, 2021 and August 6, 2021. The action area was surveyed within line-of-sight of the Project visually and with the aid of binoculars on foot and from a vehicle systematically traversing across the area while scoping surrounding areas of potential wildlife habitat.

Detailed botanical surveys were conducted within the environmental survey area. The survey was done by a combination of systematic transects and random meanders throughout each plant community. Plant communities were documented by recording the species encountered and estimating the dominance of plant species. Representative digital photographs were taken of the Project area and surroundings to illustrate habitat, topography, and existing development.

Existing Conditions

Action Area Description

At the landscape scale, the survey area is within the Missouri Plateau ecoregion of North Dakota (Bryce et al. 1996). This landscape contains gently rolling to flat topography with prairie pothole wetland depressions with few integrated stream systems. Most of the action area is used as agricultural crop land, with some vegetated wetland habitat present in the western portion of the action area.

Habitat and Plant Community Description

Most of the project area was dominated by agricultural crop land (**Photo 1**). Some introduced grassland was present along field margins, road ditches, and drainage ditches. These areas were dominated by smooth brome (*Bromus inermis*), Kentucky bluegrass (*Poa pratensis*), and quackgrass (*Elymus repens*). Crop fields did occasionally contain wetland depressions, but these areas were unvegetated or cropped.

Native habitats were primarily present in Section 22 and 23 T145N, R82W (**Photo 2**). This area contained a combination of upland habitats dominated by quackgrass and western wheatgrass (*Pascopyrum smithii*). Occasional green ash (*Fraxinus pennsylvanica*), cottonwoods (*Populus deltoides*), and Russian olive (*Elaeagnus angustifolia*) were present throughout the area. Emergent wetlands were dominated by cattails (*Typha* sp.) and prairie cordgrass (*Spartina pectinata*).



Photo 1. View west in Section 21, T145N, R82W showing the typical landscape within the environmental survey area and broader action area.



Photo 2. View northwest in Section 22, T145N, R82W of the native habitat present in the Project area. This area contained emergent wetland vegetation, with uplands dominated by a mixture of native and introduced grasses.

Biological Assessment

The Biological Assessment (BA) analyzes the potential effects of the proposed Project on federally listed threatened, endangered, and proposed species and critical habitats to determine whether species or habitat are likely to be adversely affected.

A list of federally threatened, endangered, candidate and proposed resources was obtained for McLean County from the USFWS Information for Planning and Conservation (IPaC) application (USFWS 2021) (**Table 2**). Six (6) species have the potential to occur in the McLean County (i.e., habitat is present or in close proximity). Of these six species, three may occur in the action area.

Table 1. Federally Listed, Proposed, and Candidate Resources with the Action Area

Species/Critical Habitat	Status	Potential to occur in the Action Area	Habitat Description and Range in North Dakota
Pallid Sturgeon (<i>Scaphirhynchus albus</i>)	E	No	Turbid main stem shallow river channels of the Yellowstone and Missouri.
Whooping Crane (<i>Grus americana</i>)	E	Yes	Migrates through ND, using wetlands and agricultural land as stopover habitat.

Species/Critical Habitat	Status	Potential to occur in the Action Area	Habitat Description and Range in North Dakota
Dakota Skipper (<i>Hesperia dacotae</i>)	T, CH	Yes	Native prairie habitat with high forb diversity and abundance. In McKenzie County, typically found in little bluestem dominated communities.
Northern Long-Eared Bat (<i>Myotis septentrionalis</i>)	T	Yes	Forested habitats, emergent wetlands, agricultural fields, old fields, pastures.
Piping Plover (<i>Charadrius melodus</i>)	T, CH	No	Sparsely vegetated sandbars, sand and gravel beaches on islands in the Yellowstone and Missouri Rivers.
Rufa Red Knot (<i>Calidris canutus rufa</i>)	T	No	Migratory transient through ND using similar habitat as the piping plover for stopover habitat.

¹Status Codes: E=federally listed endangered; T=federally listed threatened; and CH=designated critical habitat

Pallid Sturgeon (*Scaphirhynchus albus*)

Current Status: Pallid sturgeons prefer turbid, main-stem shallow river channels with sand and gravel bars (55 FR 36641 36647). In North Dakota, pallid sturgeons are currently known primarily from the Missouri-Yellowstone confluence, though they can occur anywhere in the Missouri River and lower Yellowstone Rivers between the Garrison Dam and Fort Peck Dam. Pallid sturgeons likely use portions of Lake Sakakawea where or when its characteristics approach riverine habitat.

Potential Habitat Surrounding and within the Project Area: The Project area is about 5 miles from the Missouri River, the nearest known habitat for this species.

Direct and Indirect Effects: Direct and indirect effects are not anticipated for this species since potential habitat is not present.

Cumulative Effects: No direct or indirect effects to the pallid sturgeon are expected from the proposed action. Therefore, the construction and operation of the Project are not expected to contribute to cumulative effects to this species.

Determination: The Project would have *no effect* to the pallid sturgeon.

Whooping Crane (*Grus americana*)

Current Status: The whooping crane breeds in wetland habitat associated with Wood Buffalo National Park in Alberta and the Northwest Territories of northern Canada, and overwinters on the Texas coast (43 FR 36588 36590). The migration corridor for the Aransas-Wood Buffalo Population (AWBP) or whooping cranes follows an approximate straight path, with the cranes traveling through Alberta, Saskatchewan, extreme eastern Montana, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas. The migration route approximately follows the Missouri River corridor through the Midwestern United States. During migration, whooping

cranes use stopover habitat opportunistically. In general, they avoid rocky substrates and heavily vegetated sites (Armbruster 1990). They typically use shallow marshes with minimal to no emergent zone for roosting, and nearby (within one kilometer) upland cropland and pastures for foraging (Howe 1989). When they use riverine habitats, they roost on submerged sandbars in wide, unobstructed channels that are isolated from human disturbance (Armbruster 1990).

Potential Habitat Surrounding and within the Project Area: The action area is within the migration corridor where 95 percent of confirmed whooping crane sightings have been made (USFWS 2012). Since the Project is within the whooping crane migratory corridor, whooping cranes may occur in the vicinity of the Project during the April 1 – May 15 and/or September 10 – October 31 migration periods. Wetland and agricultural crop land is present within the action area and environmental survey area that could be suitable stopover habitat for this species.

Direct and Indirect Impacts: It is unlikely that stopover habitat within the Project area would be used by the whooping crane. The nearby town of Garrison and existing human developments in the area likely already deter use by this species. No new overhead transmission lines would be needed for the Project, which are the greatest known source of mortality for fledglings. Cranes flying overhead would be too high to collide with vehicles. If a whooping crane is observed, construction would be stopped, the USFWS would be notified, and construction would not proceed until after whooping cranes have left the area and permission to proceed has been granted by the USFWS. Therefore, no direct or indirect effects are expected from construction, operation, or maintenance of the Proposed Action.

Cumulative Effects: No direct or indirect effects to the whooping crane are expected from the proposed action. Therefore, the construction and operation of the Project are not expected to contribute to cumulative effects to this species.

Determination: The Project would have *no effect* to the whooping crane.

Dakota Skipper *Hesperia dacotae*

Current Status: The Dakota skipper is a small butterfly found in the tallgrass and mixed grass prairies of the Northern Great Plains. Dakota skippers have a single flight per year occurring from the middle of June through the end of July (Dana 1991). Current data suggests that dispersal of Dakota skipper is very limited (79 FR 63672), and individuals may be incapable of moving greater than one kilometer (0.6 miles) between patches of prairie habitat separated by structurally similar habitats (Cochrane and Delphey 2002). Dakota skipper habitat has been categorized into two main types, both of which can meet the composition needed to support the entire life cycle of the species. “Type A” habitat is low, wet-mesic prairie on near-shore glacial lake deposits, dominated by bluestem grasses (79 FR 63672). “Type B” habitat occurs on rolling terrain over gravelly glacial moraine deposits and is dominated by bluestems and needle grasses (*Hesperostipa* sp.). Dakota skippers have been documented in McKenzie and Dunn counties in high rolling prairie “Type B” habitat (79 FR 63672).

Potential Habitat Surrounding and within the Project Area: Native prairie habitat is not present within the Project area that would be suitable habitat for this species. Within the action area, the

nearest potential native prairie habitat is in the northwest corner of Section 28, T145N, R82W. This area is separated from the Project area by 0.7 miles of agricultural crop land and introduced grassland dominated by smooth brome. Since Dakota skippers have limited dispersal (1km or 0.6 miles), and since suitable habitat is not present in the Project, Dakota skippers would be unlikely to disperse into the Project area from the broader action area.

Direct and Indirect Effects: Direct effects are not anticipated for this species since potential habitat is not present in the Project area. The nearest potential native prairie habitat in the action area is 0.7 miles south of the Project area. At this distance, indirect effects are not anticipated.

Cumulative Effects: No direct or indirect effects to the Dakota skipper are expected from the proposed action. Therefore, cumulative effects to this species as a result of the Project are not anticipated.

Determination: The Project would have *no effect* to the Dakota skipper.

Northern Long-eared Bat *Myotis septentrionalis*

Current Status: The northern long-eared bat is an insectivorous bat that uses different roost sites in different seasons. In winter, northern long-eared bats hibernate in caves or mines with high humidity and stable temperatures (80 FR 17974). Suitable summer habitat consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags at least 3 in [7.6 cm] dbh that have exfoliating bark, cracks, crevices, and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. Isolated trees are considered suitable habitat when they exhibit the characteristics of a suitable roost tree and are less than 1,000 ft (305 m) from the next nearest suitable roost tree, woodlot, or wooded fencerow (80 FR 17974). The northern long-eared bat has been considered for listing primarily because of white nose syndrome (WNS), an infectious fungus that is responsible for severe population declines.

Potential Habitat Surrounding and within the Project Area: Although the northern long-eared bat is listed as occurring in McLean County and its presence has been confirmed in the badlands and Missouri River valley (Nelson et al. 2015), specific occurrence information within or surrounding the Project area is not available. Cottonwood trees are present in the Project area that could be suitable roosting habitat for this species.

Direct and Indirect Effects: Direct effects could occur if roosting trees used by northern long-eared bats were removed by construction activities during summer use (April through September). While trees are present in the Project area, they would not be impacted by construction. Therefore, no direct effects to this species would occur as a result of the Project. It is also unlikely that temporary increased noise and human activity during construction of the Project would be discernible to northern long-eared bats using adjacent habitat, compared to the existing traffic and noise regime, such that the Project itself would cause displacement. Construction noise and human presence is not an identified cause for this species' decline (80 FR

17974). Therefore, no direct and or indirect effects would occur as a result of construction of the Project.

Cumulative Effects: No direct or indirect adverse effects are expected as a result of the Project; therefore, the Project would not contribute to cumulative effects to northern long-eared bats.

Determination: The Project would have *no effect* to the northern long-eared bat.

Piping Plover *Charadrius melodus*

Current Status: Suitable nesting habitat for piping plovers in the Missouri and Yellowstone River systems is characterized as sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and island margins that interface with the river channel. Piping plovers forage on open beaches, primarily consuming insects and crustaceans. Breeding piping plovers rarely travel more than one mile from their nest sites during the breeding season (67 FR 57638).

Potential Habitat Surrounding and within the Project Area: No potential nesting or foraging habitat is present in the Project area. The nearest potential habitat is the Missouri River approximately 5 miles to the south.

Direct and Indirect Effects: Direct and indirect effects are not anticipated for this species since potential habitat is not present.

Cumulative Effects: No direct or indirect effects to the piping plover are expected from the proposed action. Therefore, the construction and operation of the Project are not expected to contribute to cumulative effects to this species.

Determination: The Project would have *no effect* to the piping plover.

Rufa Red Knot (*Calidris canutus rufa*)

Current Status: The rufa red knot makes one of the longest annual migrations of any bird, traveling up to 18,000 miles between Arctic breeding grounds in northern latitudes to nonbreeding areas in South America (79 FR 73706). Migratory pathways typically follow coastlines, but rufa red knots have been documented to use the Mid-Continental Flyway, using various sites in the Northern Great Plains (including North Dakota) as stopover habitat, primarily from May through August. However, the red knot has also been documented to avoid the Northern Great Plains during some migrations. The red knot is considered to be a rare transient through North Dakota during the spring and fall migrations, with few confirmed reports in the state (Newstead et al. 2013). Information is lacking on specific non-coastal stopover habitat for the rufa red knot, but would include wetland habitats similar to those selected by other shorebirds such as the least tern and piping plover. Red knots have been documented to use Lake Sakakawea as stopover habitat (Newstead et al. 2013). It is known that stopovers are time-constrained, and that the rufa red knot requires stopovers rich in easily digestible food, which may explain their use of sewage treatment ponds.

Potential Habitat Surrounding and within the Project Area: No potential nesting or foraging habitat is present in the Project area. The nearest potential habitat is the Missouri River approximately 5 miles to the south.

Direct and Indirect Effects: Direct and indirect effects are not anticipated for this species since potential habitat is not present.

Cumulative Effects: No direct or indirect effects to the rufa red knot are expected from the proposed action. Therefore, the construction and operation of the Project are not expected to contribute to cumulative effects to this species.

Determination: The Project would have ***no effect*** to the rufa red knot.

Piping Plover Designated Critical Habitat

Current Status: The USFWS designated 19 areas as critical habitat for the piping plover, including alkali wetlands, inland lakes, and reservoirs totaling approximately 183,422 acres and portions of four rivers totaling approximately 1,207.5 river miles in the states of Minnesota, Montana, Nebraska, North Dakota and South Dakota. The nearest piping plover designated critical habitat is Lake Sakakawea (USFWS 2002, 67 FR 57638). The primary constituent elements considered essential to the conservation of the species require special consideration against destruction. On Lake Sakakawea, these constituent elements include sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale, and their interface with the water (USFWS 2014a).

Designated Critical Habitat Surrounding and within the Project Area: The physical and biological features that are essential to the conservation of the species, also known as the constituent elements, of piping plover designated critical habitat are not present within the Project area or action area. The Missouri River is the nearest Designated Critical Habitat and is 5 miles south of the Project area.

Direct and Indirect Effects: No direct or indirect impacts are anticipated since the Project is over 5 miles from the nearest Designated Critical Habitat,

Cumulative Effects: No direct or indirect adverse effects are expected as a result of the Project; therefore, the Project would not contribute to cumulative effects to piping plover designated critical habitat.

Determination: The Project would have ***no effect*** to designated critical habitat for the piping plover.

Table 2. Summary of Determinations to Endangered Species Act Resources

Species/Critical Habitat	No effect	Not likely to adversely affect	Likely to adversely affect	Beneficial effect
Interior Least Tern (<i>Sterna antillarum</i>)	X			
Pallid Sturgeon (<i>Scaphirhynchus albus</i>)	X			
Whooping Crane (<i>Grus americana</i>)	X			
Dakota Skipper (<i>Hesperia dacotae</i>)	X			
Northern Long-Eared Bat (<i>Myotis septentrionalis</i>)	X			
Piping Plover (<i>Charadrius melodus</i>)	X			
Rufa Red Knot (<i>Calidris canutus rufa</i>)	X			
Piping Plover Designated Critical Habitat	X			

Bald and Golden Eagle Protection Act

Both the bald eagle (*Haliaeetus leucocephalus*) and the golden eagle (*Aquila chrysaetos*) are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d, as amended). Bald eagle breeding pairs typically nest along major river systems. Potential foraging habitat includes areas near large, perennial water bodies. Golden eagles typically nest on the steepest mountain or butte faces.

On-the-ground surveys for eagle nests were done as part of the on-site field survey within the action area. One active bald eagle nest was present within the survey area in Section 22, T145N, R82W. The nest was in a tall cottonwood tree about 244 feet north of the Project area, and about 500 feet east of a proposed access road. **(Photo 3)**. Since construction is planned for early 2022, there is potential for construction to coincide with the bald eagle nesting season. WBI informally discussed how to avoid impacts with the nest with Drew Becker at USFWS on May 21, 2021.

The potential options to avoid impacts include:

- Avoiding construction during the breeding season.
- If construction occurs during the breeding season, and if the nest is active during construction, WBI would avoid construction and all construction related activities within 660 feet of the nest. This would be done by setting up a bore 660 feet west of the nest and boring the pipeline, reemerging a minimum of 660 feet on the east side of the nest.



Photo 3. View of the bald eagle nest present just north of the Project area.

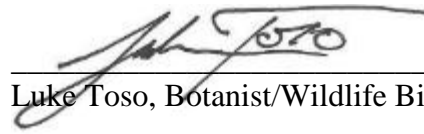
Migratory Bird Treaty Act

Numerous migratory birds pass through or breed and nest from February 1st to July 15th throughout North Dakota. Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) (916 U.S.C. 703-711) and Executive Order 13186. Migratory ground-nesting birds could use the grassland habitat within the Project area, specifically within the introduced grassland habitat. If construction occurs during the migratory bird breeding season (February 1 to July 15), WBI would either: 1) mow and maintain vegetation within the project disturbance areas prior to and during the breeding season to deter migratory birds from nesting in the project disturbance areas until construction is underway; or 2) conduct a breeding bird survey within 5 days prior to construction activities. If evidence of an active nest is identified, WBI would coordinate with the USFWS to determine actions to protect breeding birds.

Conclusion

The entire Project area is dominated by agricultural or introduced grassland habitat. Impacts to wildlife species are not anticipated due to the minor effects resulting from the Project combined with the existing human developments in the analysis area. Effects of the Project to natural resources are expected to be minor.

If you have any questions on this report, please contact me at ltoso@bcenv.org or (701) 575-0731.



Luke Toso, Botanist/Wildlife Biologist

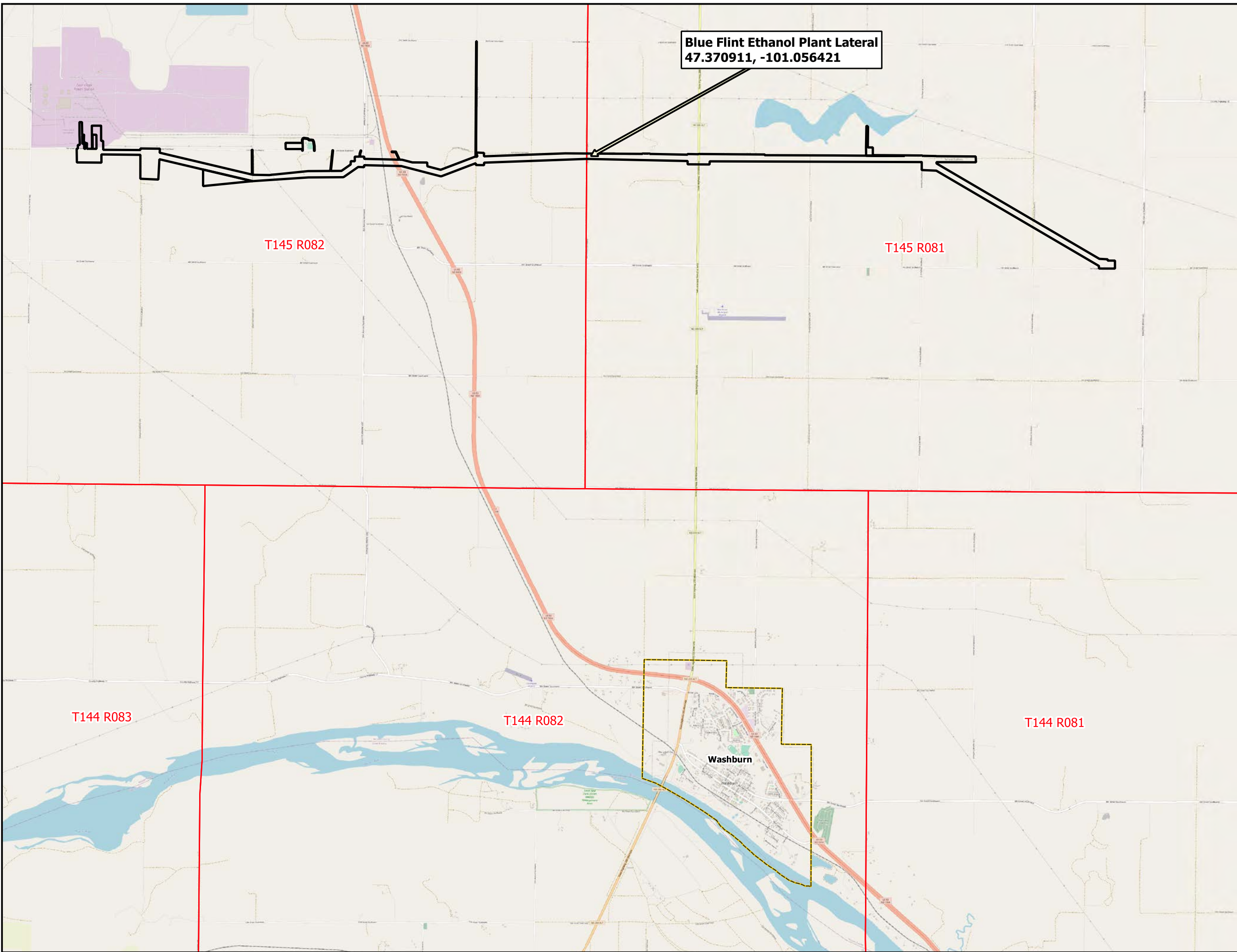
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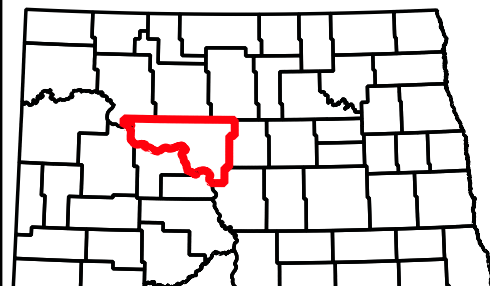
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FIGURES

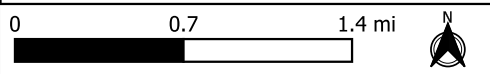


Blue Flint Ethanol Plant Lateral
 47.370911, -101.056421



McLean County, North Dakota

-  Survey Area
-  Townships



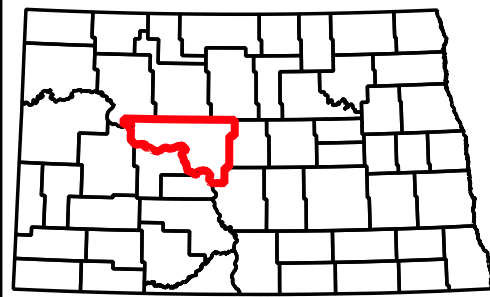
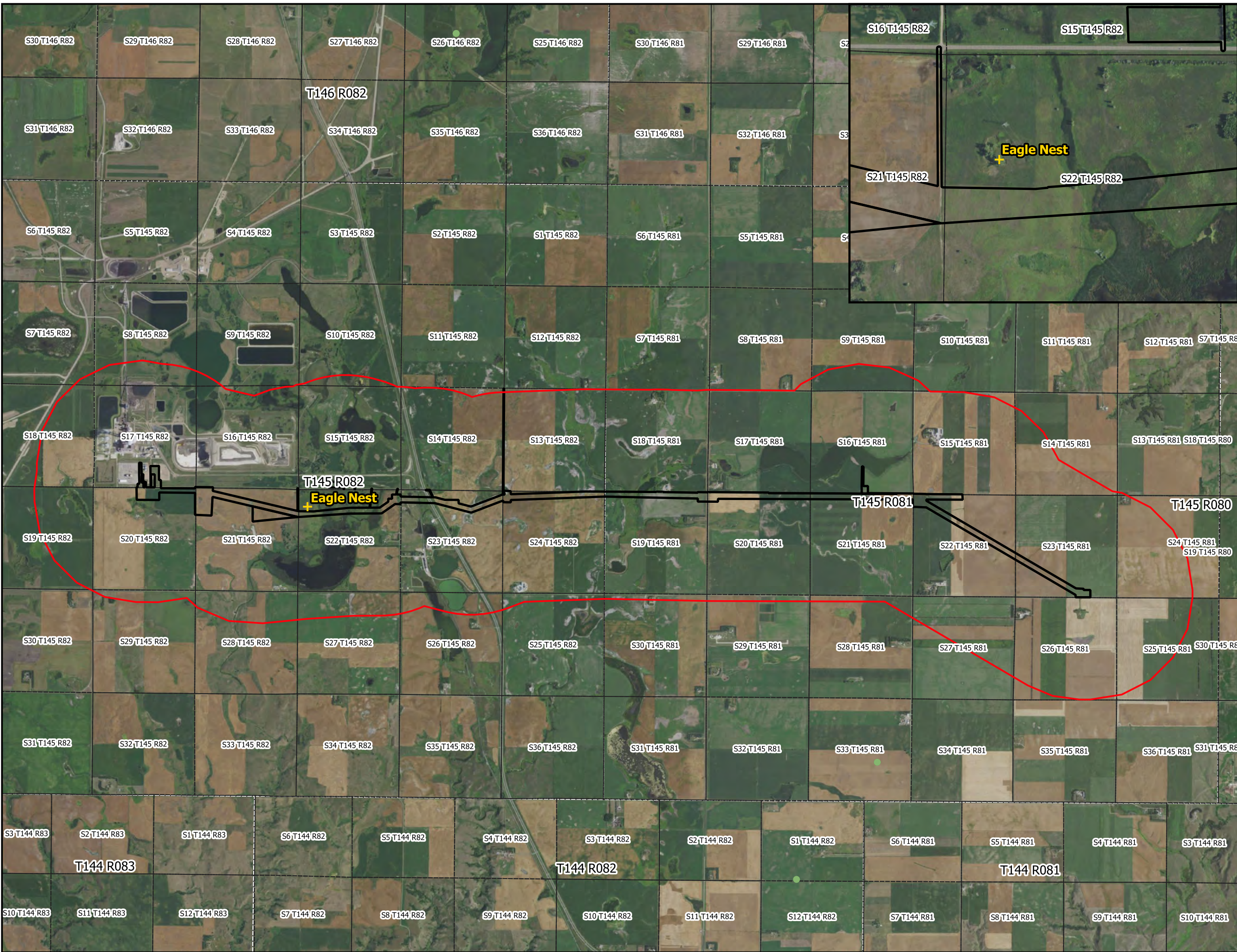
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 Map Date: 2021-08-13 10:48:49
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



VICINITY MAP

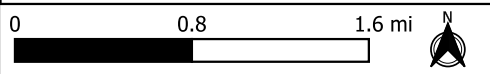
Blue Flint Ethanol Plant Lateral
WBI Energy, Inc.

Exhibit 1



McLean County, North Dakota

- + Active Eagle Nest
- Survey Area
- 1 Mile Analysis Area
- Townships
- Sections



Surveyor: LToso, AGoblirsch
 Drawn by: LToso
 Field Date: 05/05/2021, 05/06/2021, 08/06/2021
 Map Date: 2021-08-13 13:00:49
 Project Name: Blue Flint Ethanol Plant Lateral
 Background Imagery: 2020 Aerial Image (NAIP)



ANALYSIS AREA MAP

**Blue Flint Ethanol Plant
Lateral
WBI Energy, Inc.**

Volume II

Appendix Q

Construction Emissions Calculations

Line Section 7 Expansion Operational Emissions

Fugitive Pipeline Emissions

Equipment Type	Component Type	Emission Factor* (scf/hour/pipeline mileage)	Mileage of Pipeline	Hours of Operation	Fugitive Methane Emissions			Fugitive CO2 Emissions			Total GHGs as CO2 e tonne/year
					scf/hour	kg/hour	tonne/year	scf/hour	kg/hour	tonne/year	
Transmission Pipeline	Protected Steel Pipe	0.47	10	8760	4.58	0.09	0.77	0.05	0.00	0.02	19.3

*Emission factors are based on Table W-1A of 40 CFR 98 Subpart W for protected steel pipeline

Above Ground Facility Emissions

Component Type	Emission Factor* (scf/hour/component)	Number of** Components	Hours of Operation	Fugitive Methane Emissions			Fugitive CO2 Emissions			Total GHGs as CO2 e tonne/year
				scf/hour	kg/hour	tonne/year	scf/hour	kg/hour	tonne/year	
Blue Flint Delivery Station										
Connector	0.017	52	8760	0.9	0.02	0.14	0.01	0.00	0.00	
Flanges	0.017	21	8760	0.3	0.01	0.06	0.00	0.00	0.00	
Valve	0.121	35	8760	4.1	0.08	0.69	0.05	0.00	0.02	
Open-Ended Line	0.031	0	8760	0.0	0.00	0.00	0.00	0.00	0.00	
Pressure Relief Valve	0.193	0	8760	0.0	0.00	0.00	0.00	0.00	0.00	
Total						0.90			0.03	22.48

*Emission factors are based on Table W-1A of 40 CFR 98 Subpart W for component types

97.5 % CH4 average concentration using Subpart W population count method
0.0192 kg/ft³

1.1 % CO2 average concentration using Subpart W population count method
0.0526 kg/ft³

FUG Emissions Calculations

Miscellaneous Valves/Seals/Connections/Flanges/Open-Ended Lines

Notes: Emission factors were obtained from 40 CFR 98 Subpart W Table W-1A for Western U.S. Gas Service Components
Emissions calculated following methods specified in 40 CFR 98.233(r)

Example Calculations:

Fug. Methane Emissions-Connector:

Emissions Factor:	0.017 scf/hour/component	<i>40 CFR 93 Subpart W Table W-1A</i>	
Calculations:	(0.017 scf/hour/component) * (52 Connectors)*(0.975)		0.9 scf/hr
Calculations:	(0.9 scf/hr)*(0.0192 kg/scf)		0.02 kg/hr
Calculations:	(0.02 kg/hr) * (8760 hr/yr) * (0.001 tonnes/kg)		0.14 tonne/yr

Fug. CO2 Emissions-Connector:

Emissions Factor:	0.017 scf/hour/component	<i>40 CFR 93 Subpart W Table W-1A</i>	
Calculations:	(0.017 scf/hour/component) * (52 Connectors)*(0.011)		0.01 scf/hr
Calculations:	(0.01 scf/hr)*(0.0526 kg/scf)		0.00 kg/hr
Calculations:	(0.001 kg/hr) * (8760 hr/yr) * (0.001 tonnes/kg)		0.00 tonne/yr

GHG as CO2e -Pipeline

Global Warming Potential	25 CH4	1 CO2	
Calculations:	(25*0.088 kg/hr) + 0.003 kg/hr		2.20 kg/hr
Calculations:	(2.202 kg/hr) * (8760 hr/yr) * (0.001 tonnes/kg)		19.3 tonnes/yr

Project: Line Section 7 Expansion
Subject: Construction Emissions

Table 9A-1 Peak Construction Emissions

Project Emission Sources	Pollutant Emissions (Ton/Year)							
	CO	Nox	PM 10	PM 2.5	SO2	CO2e ^a	VOC	HAPS
Off-Road Construction Equipment	4.09	5.27	0.67	-	0.007	913	0.50	0.03
On-Road Motor Vehicles	0.50	0.26	0.02	0.02	0.002	199	0.07	-
Construction Activities	-	-	61.25	23.80	-	-	-	-
Unpaved Vehicle Travel	-	-	13.86	2.03	-	-	-	-
Total	4.59	5.53	75.81	25.84	0.009	1,111	0.57	0.03

^a Pollutant emissions calculated in metric tons/ year

Project: Line Section 7 Expansion
 Subject: Construction Emissions
 Task: Construction Equipment and Vehicle Emissions

Table 9A-2: Non-Road Criteria Pollutant Emission Factors^a

Equipment Description	Equipment Type	Engine Power (hp)	Emission Factor Tier	BSFC (lb/hp-hr)	Pollutant Emission Factor											
					VOC		CO		NOx		PM		SO2		CO2e	
					g/hp-hr	lb/hr	g/hp-hr	lb/hr	g/hp-hr	lb/hr	g/hp-hr	lb/hr	g/hp-hr	lb/hr	g/hp-hr	lb/hr
Air Compressor	Other Equipment	120	Tier 3	0.371	0.198	0.052	1.526	0.404	2.662	0.704	0.448	0.119	0.004	0.001	535.7	141.7
Water Pump	Other Equipment	100	Tier 3	0.412	0.198	0.044	4.166	0.918	3.195	0.704	0.000	0.000	0.004	0.001	595.6	131.3
ATV	Recreational Vehicles	20	Tier 3	0.000	0.006	0.000	0.118	0.005	0.001	0.000	0.000	0.000	0.000	0.000	0.5	0.0
Tractors	Tractor, Loaders, Backhoe	75	Tier 3	0.481	0.648	0.192	6.997	1.157	4.770	0.789	0.709	0.117	0.005	0.001	694.6	114.8
Bulldozer	Rubber Tire Dozers	200	Tier 3	0.371	0.198	0.087	1.316	0.580	2.662	1.174	0.306	0.135	0.004	0.002	535.7	236.2
Concrete Mixer Truck	Cement & Mortar Mixers	250	Tier 3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0	0.0
Large Crane	Cranes	350	Tier 3	0.367	0.171	0.132	0.970	0.748	2.560	1.975	0.208	0.161	0.004	0.003	530.5	409.3
Truck mounted Crane	Cranes	250	Tier 3	0.367	0.189	0.104	0.860	0.474	2.560	1.411	0.208	0.115	0.004	0.002	530.4	292.4
Rubber tire Backhoe	Tractor, Loaders, Backhoe	100	Tier 3	0.481	0.432	0.095	6.997	1.543	3.717	0.819	0.645	0.142	0.005	0.001	695.3	153.3
Fork Lift	Skid Steer Loader	120	Tier 3	0.433	0.432	0.114	2.564	0.678	2.662	0.704	0.715	0.189	0.004	0.001	625.3	165.4
Front End Loaders A	Tractor, Loaders, Backhoe	200	Tier 3	0.433	0.432	0.190	2.211	0.975	3.098	1.366	0.468	0.215	0.004	0.002	625.3	275.7
Generators	Other Equipment	250	Tier 3	0.371	0.198	0.109	1.316	0.728	2.662	1.467	0.306	0.168	0.004	0.002	535.7	295.3
Grader	Graders	200	Tier 3	0.371	0.198	0.087	3.897	1.718	2.662	1.174	0.306	0.135	0.004	0.002	535.7	236.2
Guided Bore Machine	Bore/Drill Rigs	225	Tier 3	0.367	0.189	0.094	0.860	0.427	2.560	1.270	0.208	0.103	0.004	0.002	530.4	263.1
Sideboom skid steer loader	Cranes	125	Tier 3	0.367	0.189	0.052	0.998	0.275	2.560	0.705	0.305	0.084	0.004	0.001	530.4	146.2
Trackhoe A	Skid Steer Loader	50	Tier 3	0.481	0.656	0.072	4.533	0.500	5.035	0.555	0.869	0.096	0.005	0.001	694.5	76.6
Trackhoe B	Excavators	250	Tier 3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0	0.0
Trackhoe B	Excavators	200	Tier 3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0	0.0
Welding Rig	Welders	25	Tier 3	0.481	1.030	0.057	6.392	0.352	5.501	0.303	0.891	0.049	0.005	0.000	693.3	38.2

Table 9A-3: Non-Road HAP Emission Factors^b

Equipment Description	Equipment Type	Engine Power (hp)	BSFC (lb/hp-hr)	Pollutant Emission Factors															
				Benzene		Toluene		Xylene		Propylene		Formaldehyde		Acetaldehyde		Acrolein		Total PAH	
				lb/MMBtu	lb/hp-hr	lb/MMBtu	lb/hp-hr	lb/MMBtu	lb/hp-hr	lb/MMBtu	lb/hp-hr	lb/MMBtu	lb/hp-hr	lb/MMBtu	lb/hp-hr	lb/MMBtu	lb/hp-hr	lb/MMBtu	lb/hp-hr
Air Compressor	Other Equipment	120	0.371	7.79E-04	5.57E-06	2.81E-04	2.01E-06	1.93E-04	1.38E-06	2.79E-03	2.00E-05	7.89E-05	5.64E-07	2.52E-05	1.80E-07	7.88E-06	5.64E-08	2.12E-04	1.52E-06
Water Pump	Other Equipment	100	0.412	7.79E-04	6.20E-06	2.81E-04	2.23E-06	1.93E-04	1.53E-06	2.79E-03	2.22E-05	7.89E-05	6.28E-07	2.52E-05	2.00E-07	7.88E-06	6.27E-08	2.12E-04	1.69E-06
ATV	Recreational Vehicles	20	0.000	7.79E-04	5.23E-09	2.81E-04	1.89E-09	1.93E-04	1.30E-09	2.79E-03	1.87E-08	7.89E-05	5.30E-10	2.52E-05	1.69E-10	7.88E-06	5.29E-11	2.12E-04	1.42E-09
Tractors	Tractor, Loaders, Backhoe	75	0.481	7.79E-04	7.24E-06	2.81E-04	2.61E-06	1.93E-04	1.79E-06	2.79E-03	2.59E-05	7.89E-05	7.33E-07	2.52E-05	2.34E-07	7.88E-06	7.32E-08	2.12E-04	1.97E-06
Bulldozer	Rubber Tire Dozers	200	0.371	7.79E-04	5.57E-06	2.81E-04	2.01E-06	1.93E-04	1.38E-06	2.79E-03	2.00E-05	7.89E-05	5.64E-07	2.52E-05	1.80E-07	7.88E-06	5.64E-08	2.12E-04	1.52E-06
Concrete Mixer Truck	Cement & Mortar Mixers	250	0.000	7.79E-04	0.00E+00	2.81E-04	0.00E+00	1.93E-04	0.00E+00	2.79E-03	0.00E+00	7.89E-05	0.00E+00	2.52E-05	0.00E+00	7.88E-06	0.00E+00	2.12E-04	0.00E+00
Large Crane	Cranes	350	0.367	7.79E-04	5.52E-06	2.81E-04	1.99E-06	1.93E-04	1.37E-06	2.79E-03	1.98E-05	7.89E-05	5.59E-07	2.52E-05	1.78E-07	7.88E-06	5.58E-08	2.12E-04	1.50E-06
Truck mounted Crane	Cranes	250	0.367	7.79E-04	5.52E-06	2.81E-04	1.99E-06	1.93E-04	1.37E-06	2.79E-03	1.98E-05	7.89E-05	5.59E-07	2.52E-05	1.78E-07	7.88E-06	5.58E-08	2.12E-04	1.50E-06
Rubber tire Backhoe	Tractor, Loaders, Backhoe	100	0.481	7.79E-04	7.24E-06	2.81E-04	2.61E-06	1.93E-04	1.79E-06	2.79E-03	2.59E-05	7.89E-05	7.33E-07	2.52E-05	2.34E-07	7.88E-06	7.32E-08	2.12E-04	1.97E-06
Fork Lift	Skid Steer Loader	120	0.433	7.79E-04	6.51E-06	2.81E-04	2.35E-06	1.93E-04	1.61E-06	2.79E-03	2.33E-05	7.89E-05	6.59E-07	2.52E-05	2.11E-07	7.88E-06	6.59E-08	2.12E-04	1.77E-06
Front End Loaders A	Tractor, Loaders, Backhoe	200	0.433	7.79E-04	6.51E-06	2.81E-04	2.35E-06	1.93E-04	1.61E-06	2.79E-03	2.33E-05	7.89E-05	6.59E-07	2.52E-05	2.11E-07	7.88E-06	6.59E-08	2.12E-04	1.77E-06
Generators	Other Equipment	250	0.371	7.79E-04	5.57E-06	2.81E-04	2.01E-06	1.93E-04	1.38E-06	2.79E-03	2.00E-05	7.89E-05	5.64E-07	2.52E-05	1.80E-07	7.88E-06	5.64E-08	2.12E-04	1.52E-06
Grader	Graders	200	0.371	7.79E-04	5.57E-06	2.81E-04	2.01E-06	1.93E-04	1.38E-06	2.79E-03	2.00E-05	7.89E-05	5.64E-07	2.52E-05	1.80E-07	7.88E-06	5.64E-08	2.12E-04	1.52E-06
Guided Bore Machine	Bore/Drill Rigs	225	0.367	7.79E-04	5.52E-06	2.81E-04	1.99E-06	1.93E-04	1.37E-06	2.79E-03	1.98E-05	7.89E-05	5.59E-07	2.52E-05	1.78E-07	7.88E-06	5.58E-08	2.12E-04	1.50E-06
Sideboom skid steer loader	Cranes	125	0.367	7.79E-04	5.52E-06	2.81E-04	1.99E-06	1.93E-04	1.37E-06	2.79E-03	1.98E-05	7.89E-05	5.59E-07	2.52E-05	1.78E-07	7.88E-06	5.58E-08	2.12E-04	1.50E-06
skid steer loader	Skid Steer Loader	50	0.481	7.79E-04	7.24E-06	2.81E-04	2.61E-06	1.93E-04	1.79E-06	2.79E-03	2.59E-05	7.89E-05	7.33E-07	2.52E-05	2.34E-07	7.88E-06	7.32E-08	2.12E-04	1.97E-06
Trackhoe A	Excavators	250	0.000	7.79E-04	0.00E+00	2.81E-04	0.00E+00	1.93E-04	0.00E+00	2.79E-03	0.00E+00	7.89E-05	0.00E+00	2.52E-05	0.00E+00	7.88E-06	0.00E+00	2.12E-04	0.00E+00
Trackhoe B	Excavators	200	0.000	7.79E-04	0.00E+00	2.81E-04	0.00E+00	1.93E-04	0.00E+00	2.79E-03	0.00E+00	7.89E-05	0.00E+00	2.52E-05	0.00E+00	7.88E-06	0.00E+00	2.12E-04	0.00E+00
Welding Rig	Welders	25	0.481	7.79E-04	7.24E-06	2.81E-04	2.61E-06	1.93E-04	1.79E-06	2.79E-03	2.59E-05	7.89E-05	7.33E-07	2.52E-05	2.34E-07	7.88E-06	7.32E-08	2.12E-04	1.97E-06

Table 9A-4: On-Road Vehicle Emission Factors^c

Vehicle Description	Vehicle Type	Scenario Year ^d	Pollutant Emission Factor (lb/mile)						
			CO	NOx	PM10	PM2.5	SOx	ROG ^e	CO2e
1/2 Ton Pickup	Passenger Vehicle	2022	3.59E-03	3.07E-04	9.68E-05	6.41E-05	1.08E-05	4.51E-04	1.11
1 Ton Pickup	Passenger Vehicle	2022	3.59E-03	3.07E-04	9.68E-05	6.41E-05	1.08E-05	4.51E-04	1.11
Semi Tractor/Large Trucks	Heavy Duty Diesel Truck	2022	4.44E-03	9.74E-03	5.08E-04	3.83E-04	3.93E-05	8.40E-04	4.20
1/2 Ton Pickup	Passenger Vehicle	2022	3.59E-03	3.07E-04	9.68E-05	6.41E-05	1.08E-05	4.51E-04	1.11
1 Ton Pickup	Passenger Vehicle	2022	3.59E-03	3.07E-04	9.68E-05	6.41E-05	1.08E-05	4.51E-04	1.11
Semi Tractor/Large Trucks	Heavy Duty Diesel Truck	2022	4.44E-03	9.74E-03	5.08E-04	3.83E-04	3.93E-05	8.40E-04	4.20

^a Emission Factors calculated using methods outlined in EPA document Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling-Compression-Ignition and Exhaust Emission Factors for Nonroad Engine Modeling - Spark Ignition

^b Emission Factors obtained from AP-42, Section 3.3 Gasoline and Diesel Industrial Engines Table 3.4-3 and 3.4-4

^c Emission Factors obtained from South Coast Air Quality Management District (SCAQMD) EMFAC2007 model run for on-road vehicles

^d Scenario Year determined based on the year of project commencement

^e Reactive Organic Compounds (ROG) is equivalent to Volatile Organic Compounds (VOC)

Project: Line Section 7 Expansion
 Subject: Construction Emissions
 Task: Construction Activities PM

Table 9A-5: Nonroad Criteria Pollutant Emission Calculations

Equipment Description	Engine Power (hp)	Number of Equipment	Weeks of Operation	Hours of Operation per Week	Project Operating Hours	Pollutant Emissions											
						VOC		CO		NOx		PM		SO2		CO2e	
						lb/day	tons	lb/day	tons	lb/day	tons	lb/day	tons	lb/day	tons	kg/day	metric tons
Air Compressor	Other Equipment	2	4	20	160	0.076	0.004	0.587	0.032	1.024	0.056	0.172	0.009	0.0014	0.000	93.5	10.3
Water Pump	Other Equipment	1	2	40	80	0.032	0.002	0.668	0.037	0.512	0.028	0.000	0.000	0.0006	0.000	43.3	4.8
ATV	Recreational Vehicles	3	12	18.0	648	0.031	0.000	0.031	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1.1	0.0
Tractors	Tractor, Loaders, Backhoe	2	4	50.0	400	0.389	0.021	4.207	0.231	2.868	0.158	0.426	0.023	0.0028	0.000	189.4	20.8
Bulldozer	Rubber Tire Dozers	2	4	50	400	0.317	0.017	2.111	0.116	4.269	0.235	0.490	0.027	0.0058	0.000	389.6	42.9
Concrete Mixer Truck	Cement & Mortar Mixers	1	2	10	20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.0	0.0
Large Crane	Cranes	1	1	40	40	0.048	0.003	0.272	0.015	0.718	0.040	0.058	0.003	0.0010	0.000	67.5	7.4
Truck mounted Crane	Cranes	1	2	40.00	80	0.076	0.004	0.345	0.019	1.026	0.056	0.083	0.005	0.0014	0.000	96.4	10.6
Rubber tire Backhoe	Tractor, Loaders, Backhoe	2	10	40.00	800	0.692	0.038	11.219	0.617	5.960	0.328	1.034	0.057	0.0075	0.000	505.6	55.6
Fork Lift	Skid Steer Loader	1	8	10.00	80	0.093	0.005	0.493	0.027	0.512	0.028	0.138	0.008	0.0008	0.000	54.6	6.0
Front End Loaders A	Tractor, Loaders, Backhoe	1	4	40.00	160	0.277	0.015	1.418	0.078	1.987	0.109	0.313	0.017	0.0027	0.000	181.9	20.0
Generators	Other Equipment	2	12	60.00	1440	1.428	0.079	9.498	0.522	19.209	1.057	2.205	0.121	0.0261	0.001	1753.3	192.9
Grader	Graders	2	10	50.00	1000	0.794	0.044	15.622	0.859	10.672	0.587	1.225	0.067	0.0145	0.001	974.0	107.1
Guided Bore Machine	Bore/Drill Rigs	1	5	50.00	250	0.213	0.012	0.970	0.053	2.886	0.159	0.235	0.013	0.0040	0.000	271.2	29.8
Sideboom	Cranes	8	12	50.00	4800	2.267	0.125	11.996	0.660	30.784	1.693	3.669	0.202	0.0430	0.002	2893.3	318.3
skid steer loader	Skid Steer Loader	2	12	20.00	480	0.316	0.017	2.180	0.120	2.422	0.133	0.418	0.023	0.0023	0.000	151.5	16.7
Trackhoe A	Excavators	3	12	60.00	2160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.0	0.0
Trackhoe B	Excavators	2	16	60.00	1920	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.0	0.0
Welding Rig	Welders	10	10	40.00	4000	2.064	0.114	12.811	0.705	11.025	0.606	1.765	0.097	0.0094	0.001	630.3	69.3
Total Emissions						9.074	0.499	74.428	4.094	95.875	5.273	12.231	0.673	0.123	0.007	8295.7	912.5

Table 9A-6: Nonroad Emission HAP Emission Calculations

Equipment Description	Engine Power (hp)	Number of Equipment	Weeks of Operation	Hours of Operation per Week	Project Operating Hours	Pollutant Emissions															
						Benzene		Toluene		Xylene		Propylene		Formaldehyde		Acetaldehyde		Acrolein		Total PAH	
						lb/day	tons	lb/day	tons	lb/day	tons	lb/day	tons	lb/day	tons	lb/day	tons	lb/day	tons		
Air Compressor	Other Equipment	2	4	20	160	0.016	0.000	0.006	0.000	0.004	0.000	0.057	0.000	0.002	0.000	0.001	0.000	0.000	0.000	0.004	0.000
Water Pump	Other Equipment	1	2	40	80	0.015	0.000	0.005	0.000	0.004	0.000	0.053	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.004	0.000
ATV	Recreational Vehicles	3	12	18.0	648	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Tractors	Tractor, Loaders, Backhoe	2	4	50.0	400	0.013	0.000	0.005	0.000	0.003	0.000	0.047	0.000	0.001	0.000	0.000	0.000	0.000	0.004	0.000	
Bulldozer	Rubber Tire Dozers	2	4	50	400	0.027	0.000	0.010	0.000	0.007	0.000	0.096	0.001	0.003	0.000	0.001	0.000	0.000	0.007	0.000	
Concrete Mixer Truck	Cement & Mortar Mixers	1	2	10	20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Large Crane	Cranes	1	1	40	40	0.046	0.000	0.017	0.000	0.011	0.000	0.166	0.000	0.005	0.000	0.001	0.000	0.000	0.000	0.013	0.000
Truck mounted Crane	Cranes	1	2	40.00	80	0.033	0.000	0.012	0.000	0.008	0.000	0.119	0.000	0.003	0.000	0.001	0.000	0.000	0.000	0.009	0.000
Rubber tire Backhoe	Tractor, Loaders, Backhoe	2	10	40.00	800	0.017	0.000	0.006	0.000	0.004	0.000	0.062	0.001	0.002	0.000	0.001	0.000	0.000	0.000	0.005	0.000
Fork Lift	Skid Steer Loader	1	8	10.00	80	0.019	0.000	0.007	0.000	0.005	0.000	0.087	0.000	0.002	0.000	0.001	0.000	0.000	0.000	0.005	0.000
Front End Loaders A	Tractor, Loaders, Backhoe	1	4	40.00	160	0.031	0.000	0.011	0.000	0.008	0.000	0.112	0.000	0.003	0.000	0.001	0.000	0.000	0.000	0.009	0.000
Generators	Other Equipment	2	12	60.00	1440	0.033	0.001	0.012	0.000	0.008	0.000	0.120	0.004	0.003	0.000	0.001	0.000	0.000	0.000	0.009	0.000
Grader	Graders	2	10	50.00	1000	0.027	0.001	0.010	0.000	0.007	0.000	0.096	0.002	0.003	0.000	0.001	0.000	0.000	0.000	0.007	0.000
Guided Bore Machine	Bore/Drill Rigs	1	5	50.00	250	0.030	0.000	0.011	0.000	0.007	0.000	0.107	0.001	0.003	0.000	0.001	0.000	0.000	0.000	0.008	0.000
Sideboom	Cranes	8	12	50.00	4800	0.017	0.002	0.006	0.001	0.004	0.000	0.059	0.006	0.002	0.000	0.001	0.000	0.000	0.000	0.005	0.000
skid steer loader	Skid Steer Loader	2	12	20.00	480	0.009	0.000	0.003	0.000	0.002	0.000	0.031	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.002	0.000
Trackhoe A	Excavators	3	12	60.00	2160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Trackhoe B	Excavators	2	16	60.00	1920	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Welding Rig	Welders	10	10	40.00	4000	0.004	0.000	0.002	0.000	0.001	0.000	0.016	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
Total Emissions						0.337	0.005	0.122	0.002	0.084	0.001	1.207	0.017	0.034	0.000	0.011	0.000	0.003	0.000	0.092	0.001

Table 9A-7: On-Road Vehicle Emissions Calculations

Vehicle Description	Vehicle Type	Scenario Year	Number of Vehicles	Avg Miles/Day	Estimated Project Days	Pollutant Emissions													
						CO		NOX		PM10		PM2.5		SOX		ROG		CO2e	
						lb/day	tons	lb/day	tons	lb/day	tons	lb/day	tons	lb/day	tons	lb/day	tons	kg/day	metric tons
1/2 Ton Pickup	Passenger Vehicle	2022	13	40	110	1.865	0.103	0.160	0.009	0.050	0.003	0.033	0.002	0.0056	0.000	0.2347	0.013	262.0	28.8
1 Ton Pickup	Passenger Vehicle	2022	12	40	110	1.721	0.095	0.147	0.008	0.046	0.003	0.031	0.002	0.0052	0.000	0.2167	0.012	241.8	26.6
Semi Tractor/Large Trucks	Heavy Duty Diesel Truck	2022	14	15	110	0.933	0.051	2.046	0.113	0.107	0.006	0.080	0.004	0.0083	0.000	0.1764	0.010	399.6	44.0
1/2 Ton Pickup	Passenger Vehicle	2022	13	40	110	1.865	0.103	0.160	0.009	0.050	0.003	0.033	0.002	0.0056	0.000	0.2347	0.013	262.0	28.8
1 Ton Pickup	Passenger Vehicle	2022	12	40.00	110.00	1.721	0.095	0.147	0.008	0.046	0.003	0.031	0.002	0.0052	0.000	0.2167	0.012	241.8	26.6
Semi Tractor/Large Trucks	Heavy Duty Diesel Truck	2022	14	15.00	110.00	0.933	0.051	2.046	0.113	0.107	0.006	0.080	0.004	0.0083	0.000	0.1764	0.010	399.6	44.0
Total Emissions						9.039	0.497	4.707	0.259	0.407	0.022	0.289	0.016	0.038	0.002	1.256	0.069	1806.8	198.8

* Please note this column is just the average number of hours per day a single piece of equipment will operate for the total amount of construction days and does not represent the number of days the equipment will be onsite
 * Emission Tier refers to the relative age of construction equipment as shown in the EPA document "Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling-Compression-Ignition"



Project: Line Section 7 Expansion
 Subject: Construction Emissions
 Task: Construction Activities PM Emissions

Estimated Project Duration 110 Days

assume 6 work days per week and 10 hour days

Construction Activities

Above Ground Facility Construction and Storage Yards

Topsoil Clearing, acres	25.95
Topsoil Depth, ft ^a	1.00
Cleared Topsoil Volume cu.ft	1,130,382
Project Sections ^b	1
Estimated Section Duration, days	110
Topsoil Volume/Project Section, cu.ft	1,130,382
Soil Density lb/cu.ft ^c	88.95
Cleared Topsoil Weight, tons	50,272

Pipeline Construction

Pipeline Installation Length, mi	10.00
Width of ROW, ft	75.00
Additional Work Space, acres	22.58
Pipeline Area, acres	113.49
Topsoil Depth, ft	1.00
Cleared Topsoil Volume, cu.ft	4,943,585
Pipe Diameter, ft	0.67
Trench Width, ft	3.00
Trench Depth, ft	6.00
Pipe Volume, cu.ft	18,431
Excavated Spoil Volume cu.ft	950,400
Project Sections	1
Miles Cleared per Section, mi	10.0
Estimated Section Duration, days	110
Topsoil Volume/ Project Section, cu.ft	4,943,585
Excavated Spoil Volume/Project Section, cu.ft	950,400
Average Soil Density lb/cu.ft	88.95
Cleared Topsoil Weight, tons	219,860
Excavated Spoil Weight, tons	42,268

Access Road Construction

Access Road Length, mi	0.07
Average Access Road width, ft	28
Access Road Area, acres	0.23
Topsoil Depth, ft	1
Access Road Soil Volume cu.ft	10,052
Project Sections	2
Estimated Section Duration, days	10
Topsoil Volume/Project Section, cu.ft	5,026
Average Soil Density lb/cu.ft	88.95
Cleared Topsoil Weight, tons	447

^a Topsoil depth default of 12 inches

^b The number of section a project is split up, more applicable for larger projects being split up into smaller sections

^c Soil Density obtained from USDA Web Soil Survey for Project area



Project: Line Section 7 Expansion
 Subject: Construction Emissions
 Task: Construction Activities PM Emissions

Material Grading PM Calculations^a

$$E = E_f * T \qquad E_f = 2.76 * k * (s^{1.5} / M^{1.4})$$

Inputs

PM 10 Aerodynamic Factor ^c	k _(PM10)	0.75	
PM 2.5 Aerodynamic Factor ^c	k _(PM2.5)	0.11	
Moisture Content (%) ^e	M	15.6329	%
Silt Content (%) ^e	s	36.938	%
Material Grading Operation (hours)	T	1100	hrs
Control Efficiency		50	%

Table 9A-8: Material Grading PM Emissions

Construction Emissions	Emission Factor (lb/hr)		Emission Rate (TPY)	
	PM 10	PM 2.5	PM 10	PM 2.5
Material Grading PM	4.949	0.726	2.722	0.399

Material Handling PM Calculations^b

$$E = E_f * Q \qquad E_f = k * 0.0032 * [(U/5)^{1.3} / (M/2)^{1.4}]$$

Inputs

PM 10 Aerodynamic Factor ^d	k _(PM10)	0.35	
PM 2.5 Aerodynamic Factor ^d	k _(PM2.5)	0.053	
Moisture Content (%) ^e	M	15.6329	%
Mean Wind Speed (mph) ^f	U	12.3	mph
Material Volume (cu.ft) 0		7,034,419	cu.ft
Soil Density (lb/cu.ft) 0		89	lb/cu.ft
Quantity of Material Handled (tons)	Q	312,847	tons
Control Efficiency		50	%

Table 9A-9: Handling Grading PM Emissions

Construction Emissions	Emission Factor (lb/ton)		Emission Rate (TPY)	
	PM 10	PM 2.5	PM 10	PM 2.5
Material Handling PM	1.014E-04	1.536E-05	0.016	0.002

^a Equation obtained from Section VI.D Mojave Desert Air Quality Management District (MDAQMD) Emission Inventory Guidance: Mineral Handling and Processing Industries

^b Equation obtained from Section VI.E MDAQMD Emission Inventory Guidance: Mineral Handling and Processing Industries

^c Factors obtained from Table 11.9.1 of AP-42 Section 11.9 Western Surface Coal Mining

^d Factors obtained from Table 13.2.4 of AP-42 Section 13.2.4 Aggregate Handling and Storage Piles

^e Information obtained from the USDA Web Soil Survey

^f Information obtained from Table 11.9.5 of AP-42 Section 11.9 Western Surface Coal Mining



Project: Line Section 7 Expansion
 Subject: Construction Emissions
 Task: Construction Activities PM Emissions

Wind Erosion from Stockpile Calculations -Above Ground Facility Construction^a

$$E = (E_f * SA * S * T) / 2000 \qquad E_f = J * 1.7 * sL / 1.5 * (365 - P) / 235 * I / 15$$

Inputs

PM10 Aerodynamic Factor ^a	J	0.5
PM2.5 Aerodynamic Factor ^a	J	0.2
Silt Content (%) ^b	sL	36.938 %
Number of Wet Days (>0.01 in precip.) ^c	P	83 days
Percent of Windy Days (>12 mph) ^d	I	22 %
Topsoil Exposed Surface Area ^e	SA	9.50 acres
Project Sections	S	1
Exposure Duration per Section	T	110 days
Control Efficiency		50 %

0

Table 9A-10: Stockpile Wind Erosion PM - Above Ground Facilities

Construction Emissions	Emission Factor (lb/acre-day)		Emission Rate (TPY)	
	PM 10	PM 2.5	PM 10	PM 2.5
Stockpile Wind Erosion	18.59	7.43	9.71	3.88

^a Equation and Factors obtained from Section IV.G MDAQMD Emission Inventory Guidance: Mineral handling and Processing Industries

^b Information obtained from the USDA Web Soil Survey

^c Information obtained from averaging NOAA Climatology of the United States 1981-2010, Watford City, ND

^d Information obtained from North Dakota State University, North Dakota Agricultural Weather Network (NDAWN) for average wind speed data for Watford City, ND

^e Estimated surface area assuming a stockpile with shape of a truncated pyramid



Project: Line Section 7 Expansion
 Subject: Construction Emissions
 Task: Construction Activities PM Emissions

Wind Erosion from Stockpile Calculations -Pipeline Construction

$E = (E_f * SA * S * T) / 2000$

$E_f = J * 1.7 * sL / 1.5 * (365 - P) / 235 * I / 15$

Inputs

PM10 Aerodynamic Factor ^a	J	0.5	
PM2.5 Aerodynamic Factor ^a	J	0.2	
Silt Content (%) ^b	sL	36.938	%
Number of Wet Days (>0.01 in precip.) ^c	P	83	days
Percent of Windy Days (>12 mph) ^d	I	22	%
Topsoil Exposed Surface Area ^e	SA _T	39.69	acres
Spoil Exposed Surface Area	SA _{SP}	7.98	acres
Project Sections	S	1	
Exposure Duration per Section	T	110	days
Control Efficiency		50	%

Table 9A-11: Stockpile Wind Erosion PM - Pipeline

Construction Emissions	Emission Factor (lb/acre-day)		Emission Rate (TPY)	
	PM 10	PM 2.5	PM 10	PM 2.5
Topsoil Wind Erosion	18.59	7.43	40.57	16.23
Spoil Wind Erosion	18.59	7.43	8.16	3.26
Total Stockpile Wind Erosion			48.74	19.49

^a Equation and Factors obtained from Section IV.G MDAQMD Emission Inventory Guidance: Mineral handling and Processing Industries

^b Information obtained from the USDA Web Soil Survey

^c Information obtained from averaging NOAA Climatology of the United States 1981-2010, Watford City, ND

^d Information obtained from North Dakota State University, North Dakota Agricultural Weather Network (NDAWN) for average wind speed data for Watford City, ND

^e Estimated surface area assuming one stockpile per project section with shape of a truncated pyramid



Project: Line Section 7 Expansion
 Subject: Construction Emissions
 Task: Construction Activities PM Emissions

Wind Erosion from Stockpile Calculations -Access Road Construction^a

$E = E_f * A * S * T$

$E_f = J * 1.7 * sL / 1.5 * (365 - P) / 235 * I / 15$

Inputs

PM10 Aerodynamic Factor ^a	J	0.5	
PM2.5 Aerodynamic Factor ^a	J	0.2	
Silt Content (%) ^b	sL	36.938	%
Number of Wet Days (>0.01 in precip.) ^c	P	83	days
Percent of Windy Days (>12 mph) ^d	I	22	%
Topsoil Exposed Surface Area	SA	0.01	acres
Project Sections		2	
Exposure Duration per Section		10	days
Control Efficiency		50	%

Table 9A-10: Stockpile Wind Erosion PM - Compressor Station

Construction Emissions	Emission Factor (lb/acre-day)		Emission Rate (TPY)	
	PM 10	PM 2.5	PM 10	PM 2.5
Stockpile Wind Erosion	18.59	7.43	0.00	0.00

^a Equation and Factors obtained from Section IV.G MDAQMD Emission Inventory Guidance: Mineral handling and Processing Industries

^b Information obtained from the USDA Web Soil Survey

^c Information obtained from averaging NOAA Climatology of the United States 1981-2010, Watford City, ND

^d Information obtained from weatherunderground.com 2010-2014 average wind speed data for Williston and Minot, ND

^e Estimated surface area assuming a stockpile with shape of a truncated pyramid

Project: Line Section 7 Expansion
 Subject: Construction Emissions
 Task: Construction Activities PM Emissions

Dust Entrainment from Paved Roads Calculation^a

$$E = E_f * V$$

$$E_f = k * (sL/2)^{0.65} * (W/3)^{1.5}$$

Inputs:

PM 10 Aerodynamic Factor ^a	k	0.016	
PM 2.5 Aerodynamic Factor ^a	k	0.004	
Vehicle Miles Traveled (miles):	V	See Table	
Vehicle Weight (tons):	W	See Table	
Silt Loading (g/m ²) ^b	sL		
Normal Conditions		0.60	g/m ²
Wintertime Conditions		2.40	g/m ²
Percent Wintertime Conditions (%)		0.0	%

Table 9A-12: Fugitive Dust Calculation by Vehicles on Paved Roads

Vehicle Description	Vehicle Type	Number of Vehicles	Vehicle Weight (tons)	VMT ^c	Emission Factor (lb/VMT)		Total Emissions (TPY)	
					PM 10	PM 2.5	PM 10	PM 2.5
Passenger Vehicle	1/2 Ton Pickup	13	0.5	45,760	0.001	0.000	0.015	0.004
1 Ton Pickup	Passenger Vehicle	12	1	42,240	0.001	0.000	0.014	0.003
Semi Tractor/Large Trucks	Heavy Duty Diesel Truck	14	23.25	18,480	0.001	0.000	0.006	0.002
1/2 Ton Pickup	Passenger Vehicle	13	0.5	45,760	0.001	0.000	0.015	0.004
1 Ton Pickup	Passenger Vehicle	12	1	42,240	0.001	0.000	0.014	0.003
Semi Tractor/Large Trucks	Heavy Duty Diesel Truck	14	23.25	18,480	0.001	0.000	0.006	0.002
Total							0.070	0.017

^a Equation and Factors obtained from Section IV.J MDAQMD Emission Inventory Guidance: Mineral handling and Processing Industries

^b Information obtained from AP-42 Section 13.2.1 Paved Roads Table 13.2.1-2

^c Estimated vehicle miles traveled (VMT) that is on paved roads

Project: Line Section 7 Expansion
 Subject: Construction Emissions
 Task: Construction Activities PM Emissions

Dust Entrainment from Unpaved Roads Calculation^a

$$E = Ef * V$$

$$Ef (PM10) = 2.6 * (s/12)^{0.8} * (W/3)^{0.4} * (M/0.2)^{-0.3} * [(365-P)/365]$$

$$Ef (PM 2.5) = 0.38 * (s/12)^{0.8} * (W/3)^{0.4} * (M/0.2)^{-0.3} * [(365-P)/365]$$

Inputs

Vehicle Miles Traveled (miles):	V	See Table 2	
Vehicle Weight (tons):	W	See Table 2	
Unpaved Road Surface		Rural Road (dirt)	
Unpaved Silt Loading (g/m2) ^a	sL	9.00	g/m2
Number of Wet Days (>0.01 in precip.) ^b	P	83	days
Unpaved Moisture Content (%) ^c	M	0.50	%
Control Efficiency		50	%

Table 9A-13: Fugitive Dust Calculation by Vehicle on Unpaved Roads

Vehicle Description	Vehicle Type	Number of Vehicles	Vehicle Weight (tons)	VMT	Emission Factor (lb/VMT)		Total Emissions (TPY)	
					PM 10	PM 2.5	PM 10	PM 2.5
Passenger Vehicle	1/2 Ton Pickup	13	0.5	11,440	0.296	0.043	1.693	0.247
1 Ton Pickup	Passenger Vehicle	12	1	10,560	0.391	0.057	2.062	0.301
Semi Tractor/Large Trucks	Heavy Duty Diesel Truck	14	23.25	4,620	1.375	0.201	3.176	0.464
1/2 Ton Pickup	Passenger Vehicle	13	0.5	11,440	0.296	0.043	1.693	0.247
1 Ton Pickup	Passenger Vehicle	12	1	10,560	0.391	0.057	2.062	0.301
Semi Tractor/Large Trucks	Heavy Duty Diesel Truck	14	23.25	4,620	1.375	0.201	3.176	0.464
Total							13.863	2.026

^a Equation and Factors obtained from Section IV.K MDAQMD Emission Inventory Guidance: Mineral handling and Processing Industries

^b Information obtained from averaging NOAA Climatology of the United States 1981-2010, Watford City, ND

^c Information obtained from AP-42 Section 13.2.2 Unpaved Roads

^d Estimated vehicle miles traveled (VMT) that is on unpaved roads

Volume II

Appendix R

Soil Map Units Over Exhibits

Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 1 of 25

Legend

- Access Roads
- Proposed Bore
- Proposed Pipeline
- Permanent ROW
- TWS
- ATWS
- Above Ground Facilities
- Soils

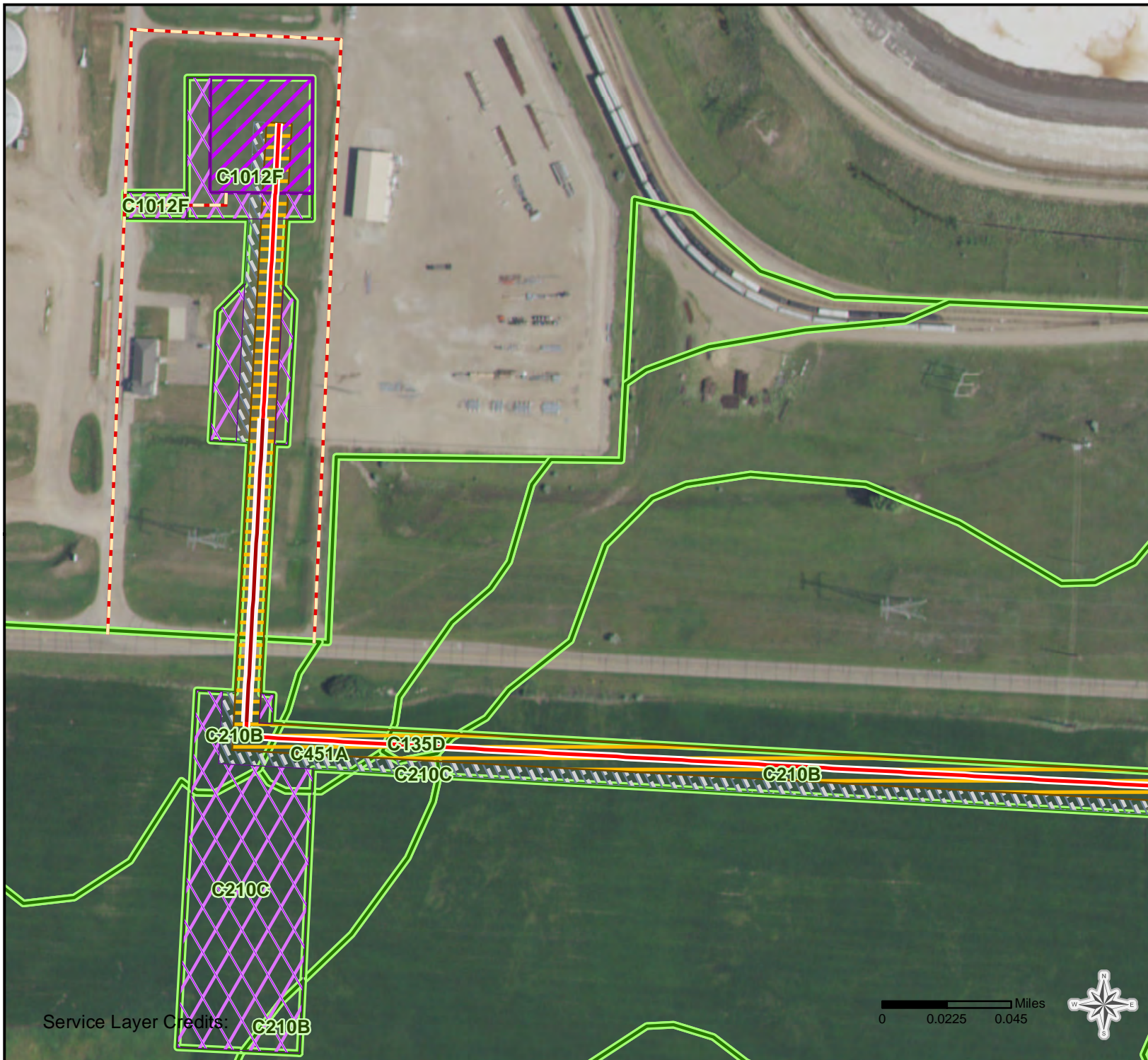
McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits: C210B

By: AB

Date:

1:3,000

- when Printed on 8X11







Revision Date: 9/23/2021

Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 2 of 25

Legend

-  Access Roads
-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  Storage Location
-  Soils

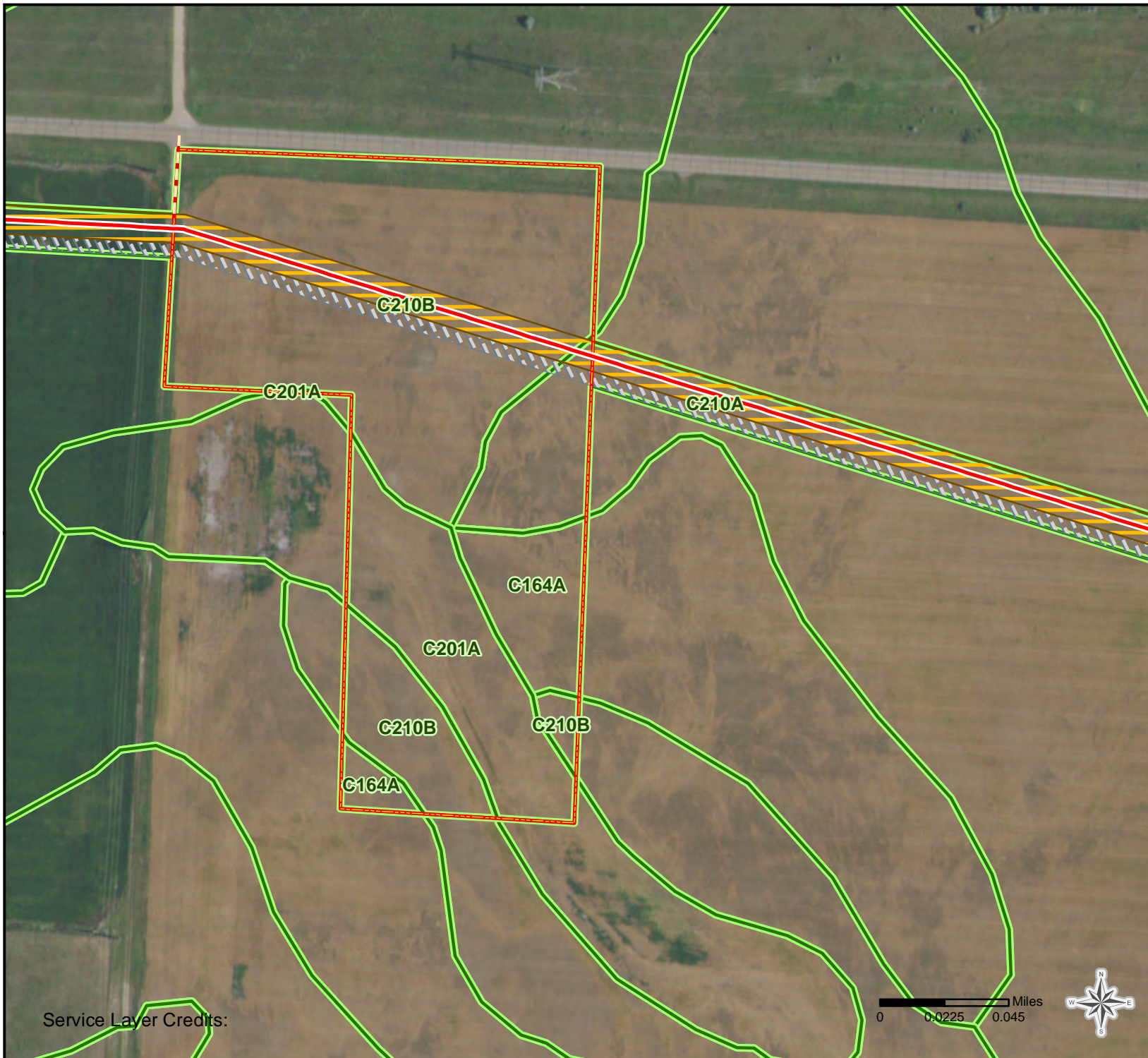
McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

0 0.0225 0.045 Miles



By: AB

Date:

1:3,000

- when Printed on 8X11






Revision Date: 9/23/2021

Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 3 of 25

Legend

-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  ATWS
-  Soils

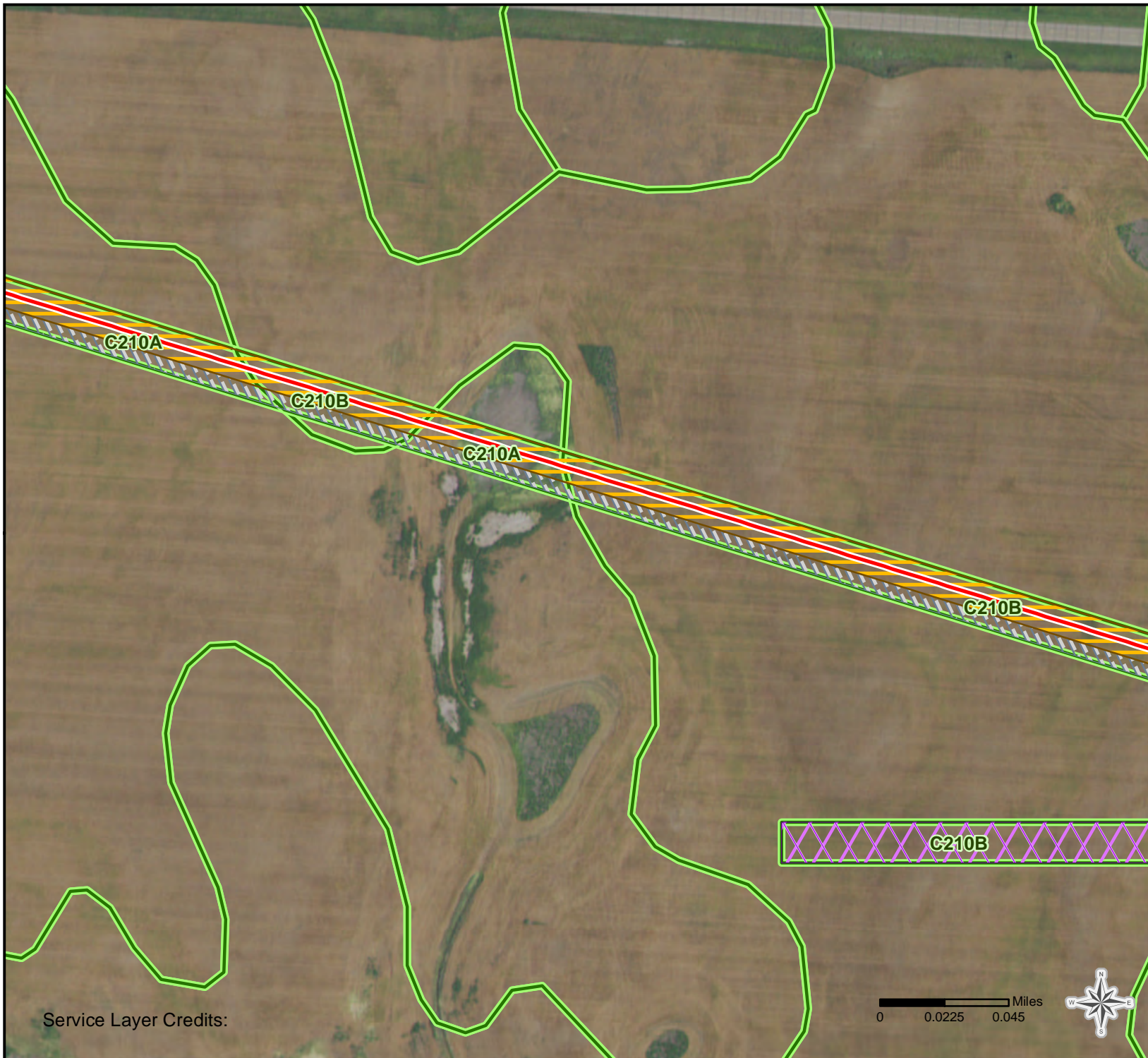
Mclean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

By: AB

Date:

1:3,000

- when Printed on 8X11






Revision Date: 9/23/2021

Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 4 of 25

Legend

-  Access Roads
-  Proposed Bore
-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  ATWS
-  Soils

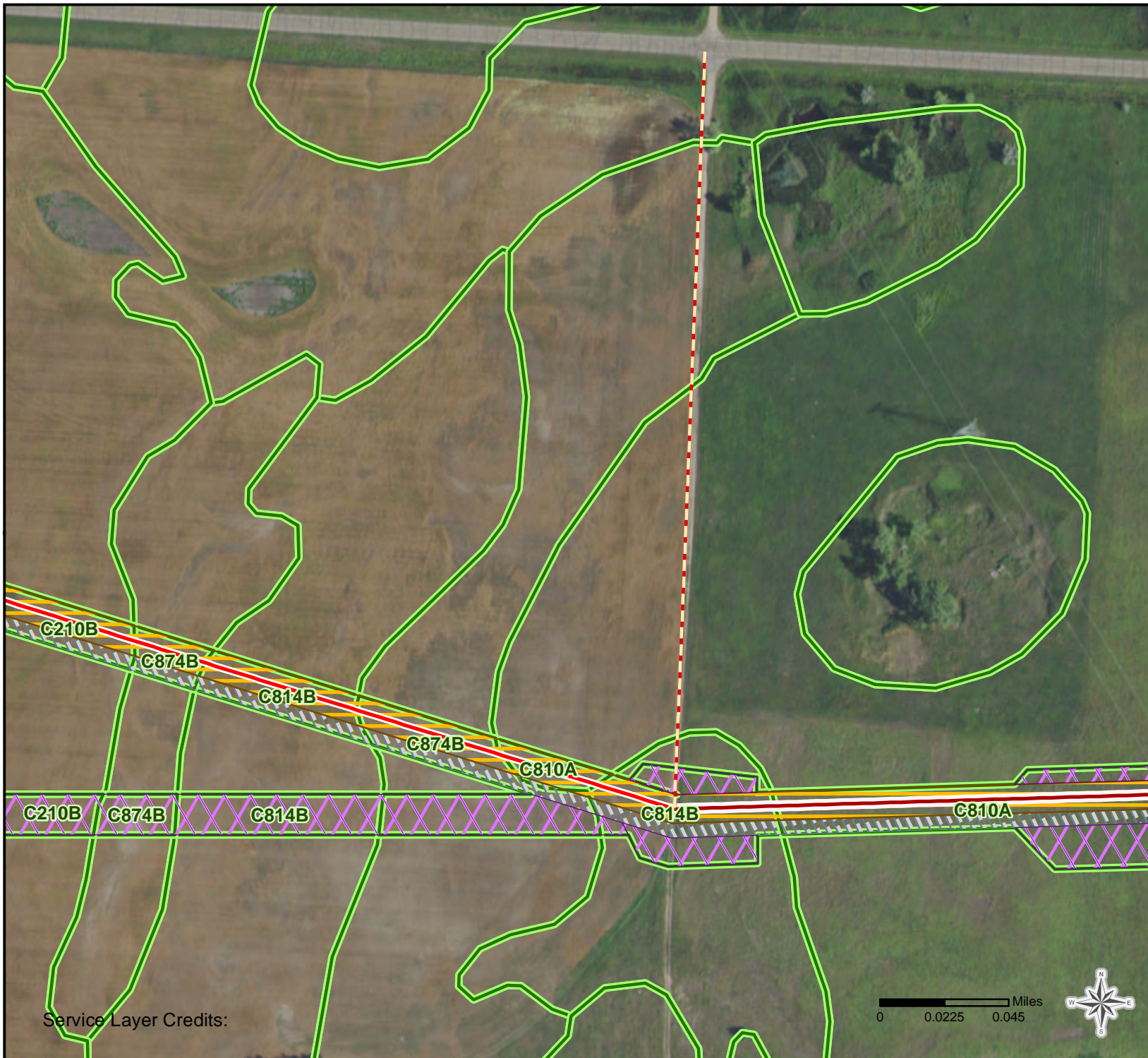
McLean County, ND

Source: NRCS 2019

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PROJECT AREA OVERVIEW



Service Layer Credits:

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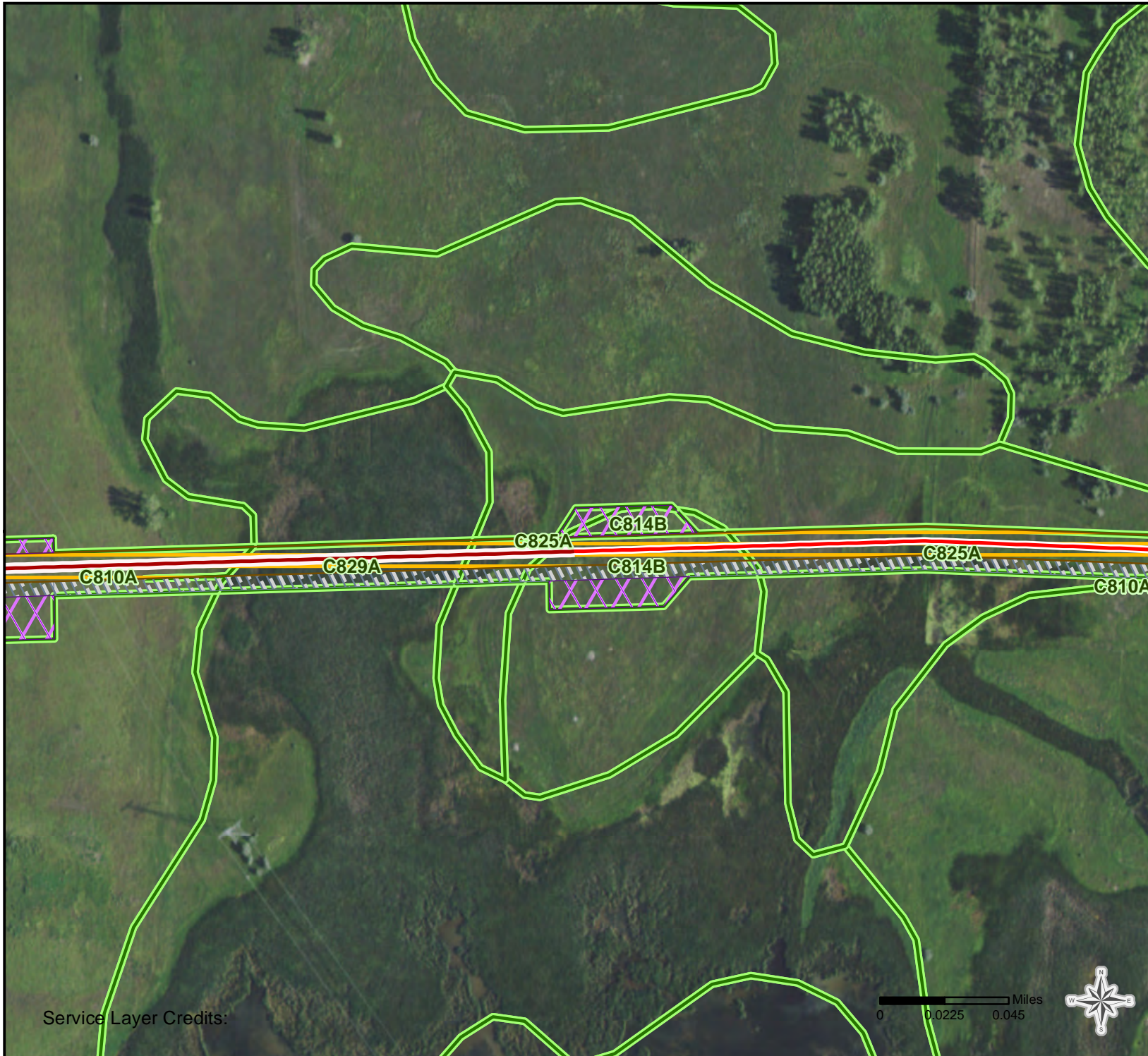
Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 5 of 25

Legend

-  Proposed Bore
-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  ATWS
-  Soils



McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

0 0.0225 0.045 Miles



By: AB

Date:

1:3,000

- when Printed on 8X11




Revision Date: 9/23/2021

Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 6 of 25

Legend

-  Access Roads
-  Storage Location
-  Soils

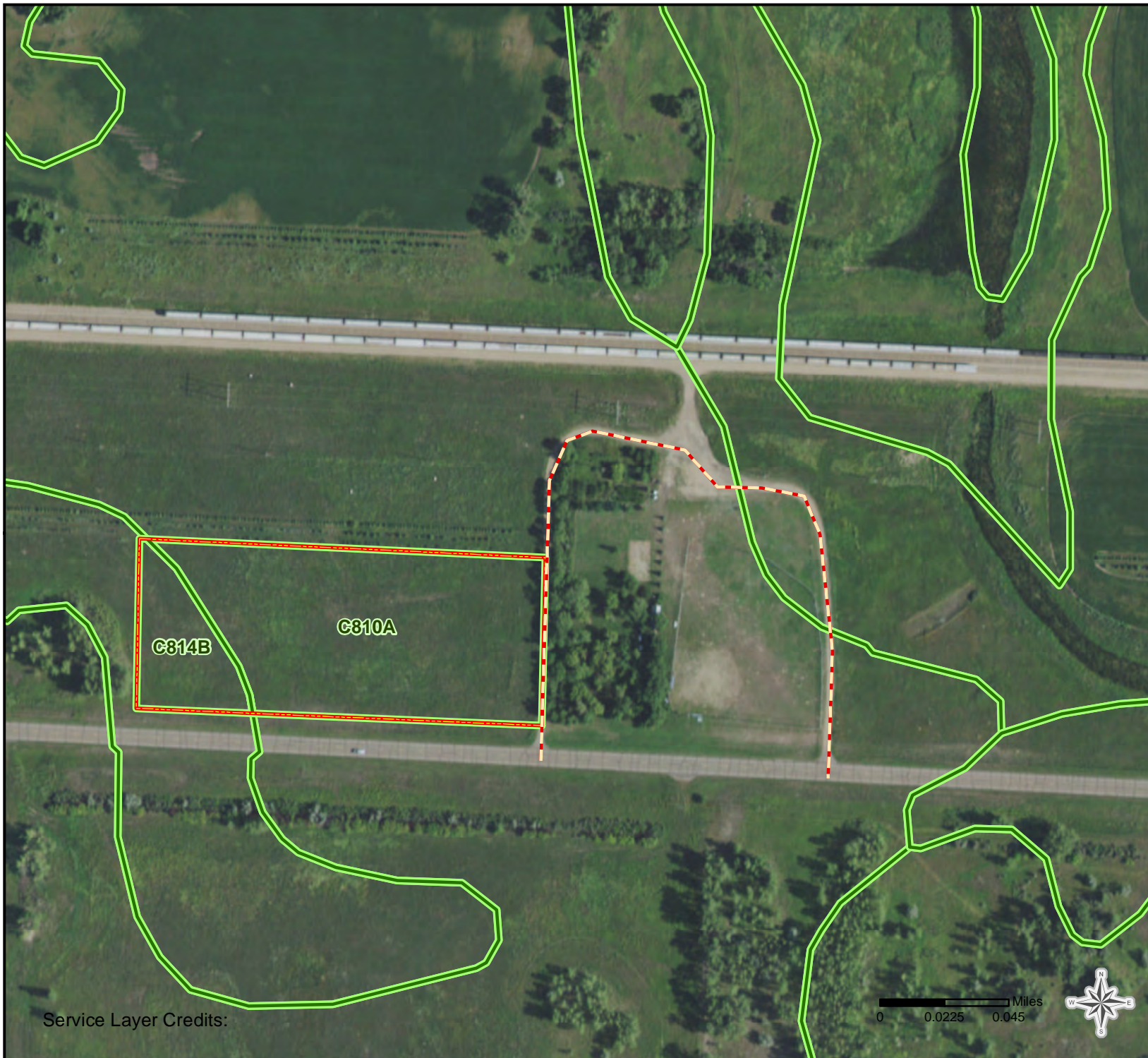
McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

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By: AB

Date:

1:3,000

- when Printed on 8X11







Revision Date: 9/23/2021

Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 7 of 25

Legend

-  Access Roads
-  Proposed Bore
-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  ATWS
-  Soils

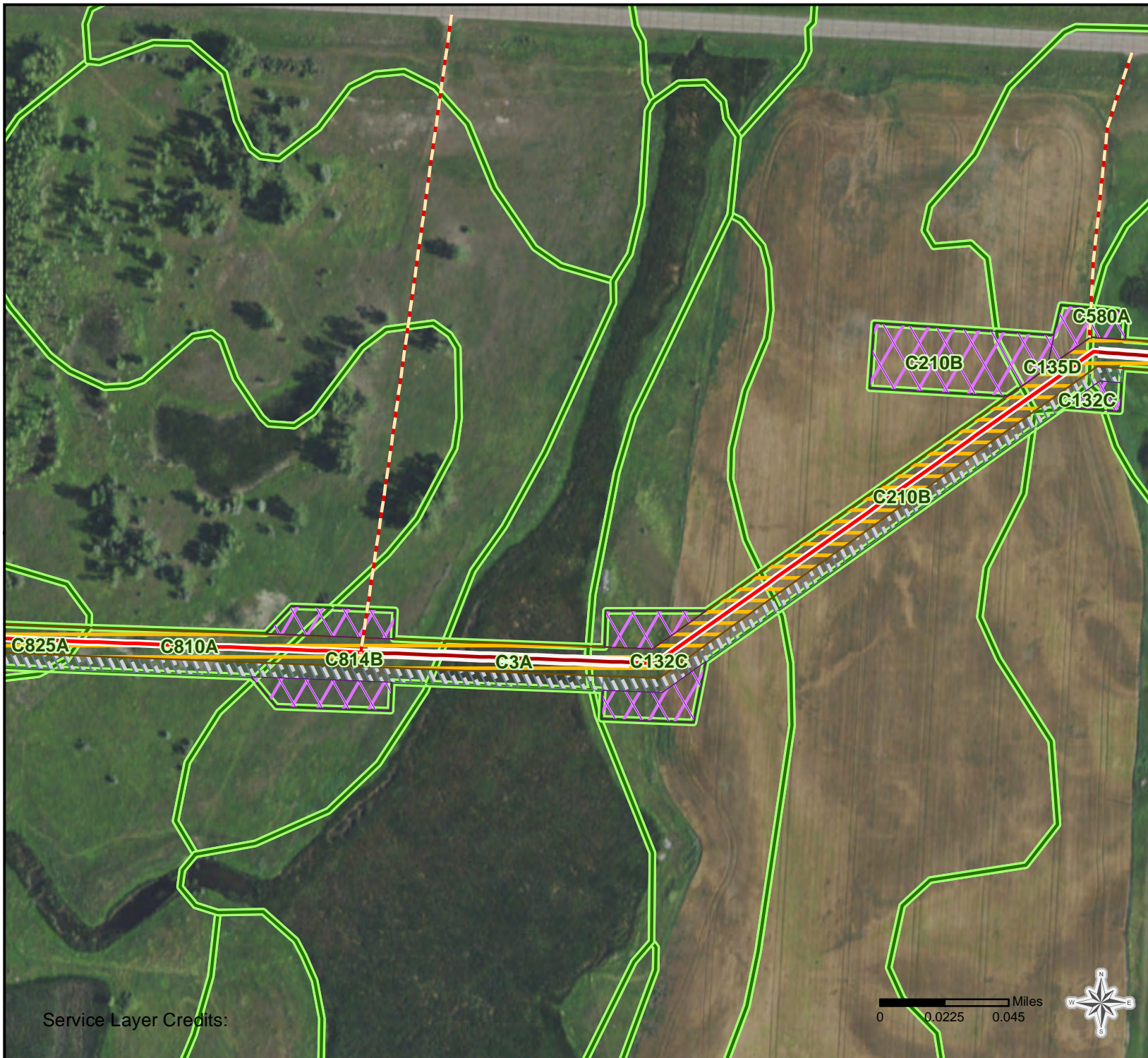
McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

By: AB

Date:

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- when Printed on 8X11






Revision Date: 9/23/2021

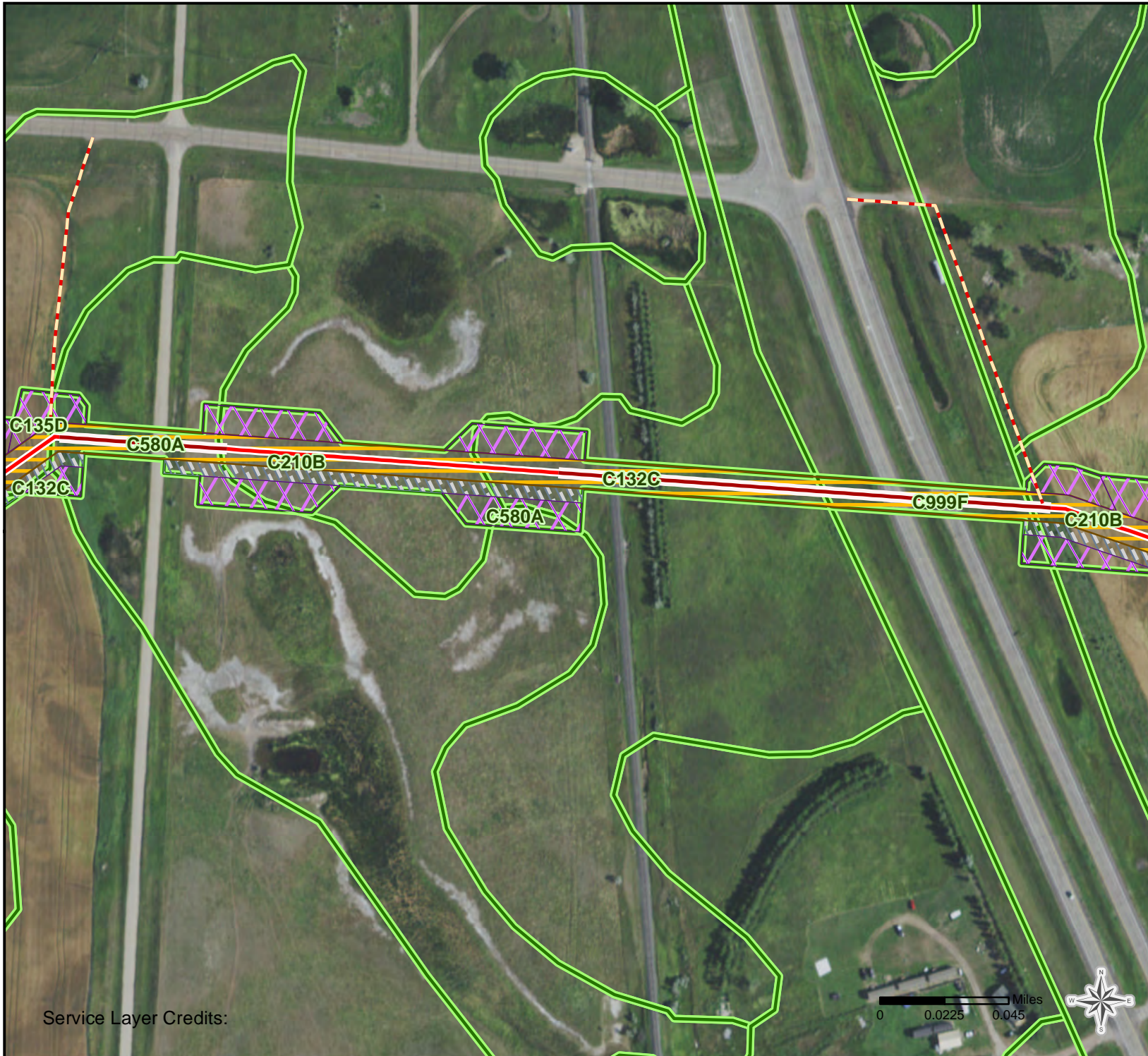
Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 8 of 25

Legend

-  Access Roads
-  Proposed Bore
-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  ATWS
-  Soils



McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

By: AB

Date:

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- when Printed on 8X11






Revision Date: 9/23/2021

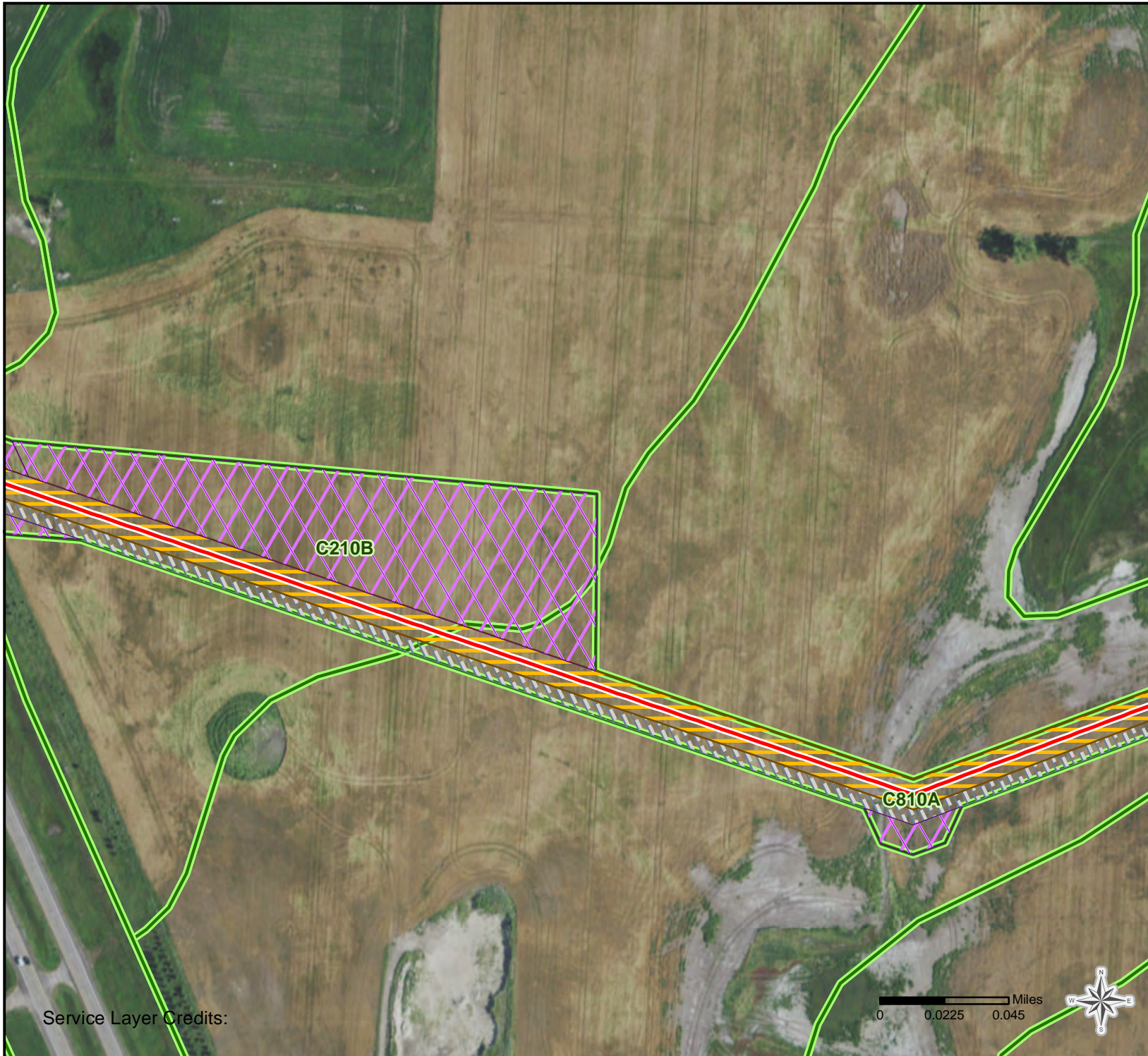
Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 9 of 25

Legend

-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  ATWS
-  Soils



McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

0 0.0225 0.045 Miles



By: AB

Date:

1:3,000

- when Printed on 8X11







Revision Date: 9/23/2021

Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 10 of 25

Legend

-  Farm Taps
-  Access Roads
-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  ATWS
-  Soils

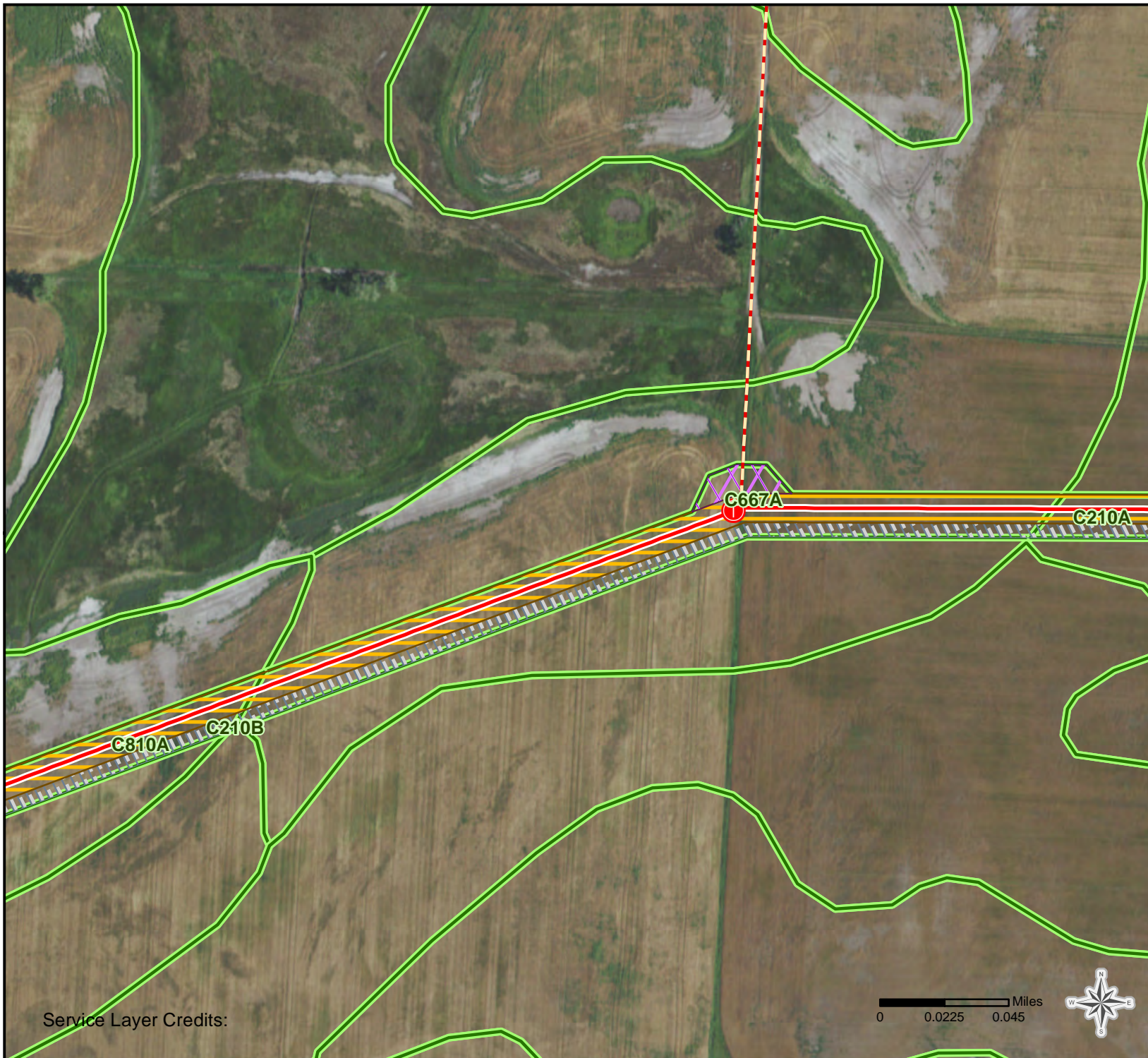
McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

By: AB

Date:

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- when Printed on 8X11





Revision Date: 9/23/2021

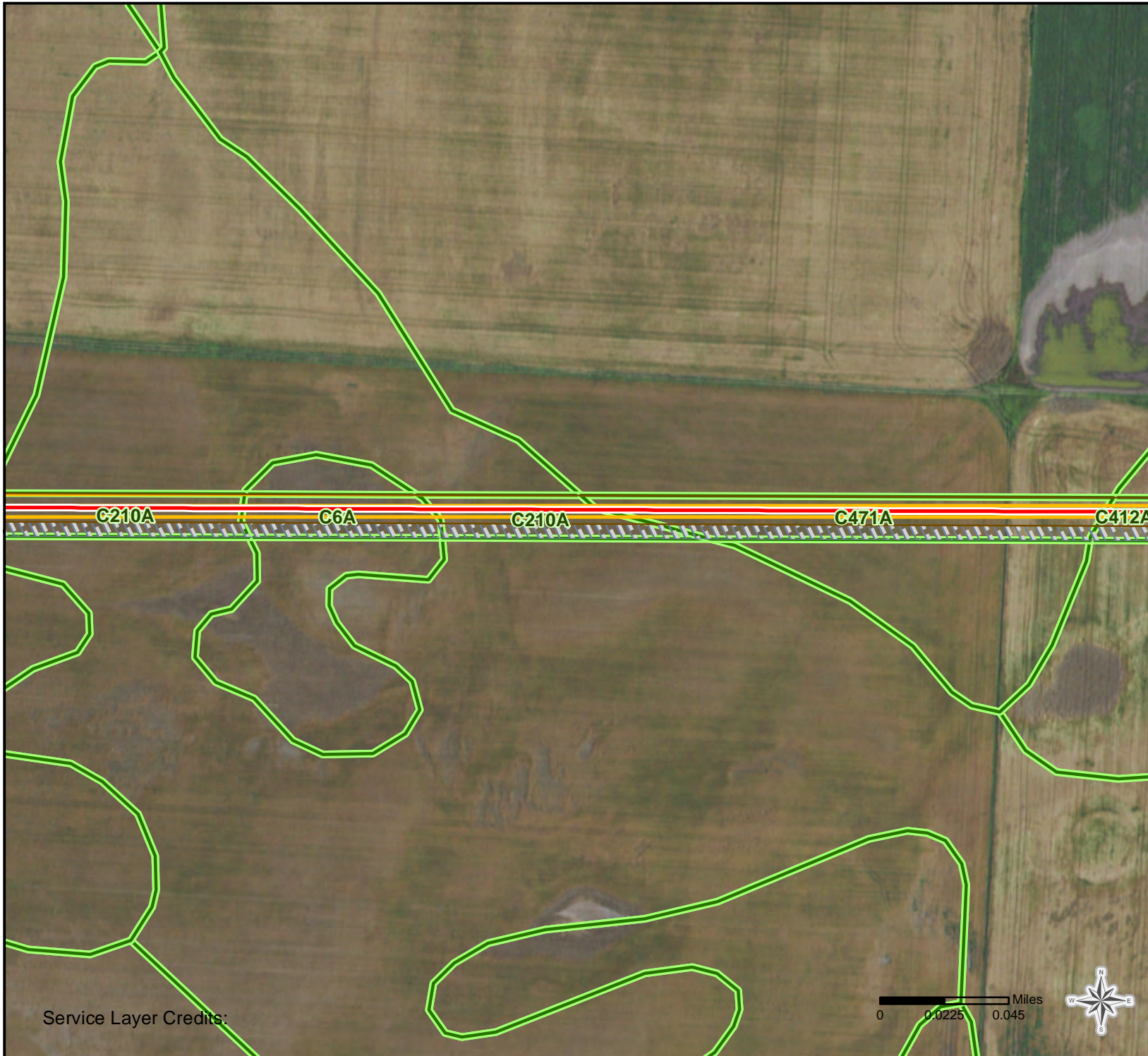
Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 11 of 25

Legend

-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  Soils



McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

By: AB

Date:

1:3,000

- when Printed on 8X11





Revision Date: 9/23/2021

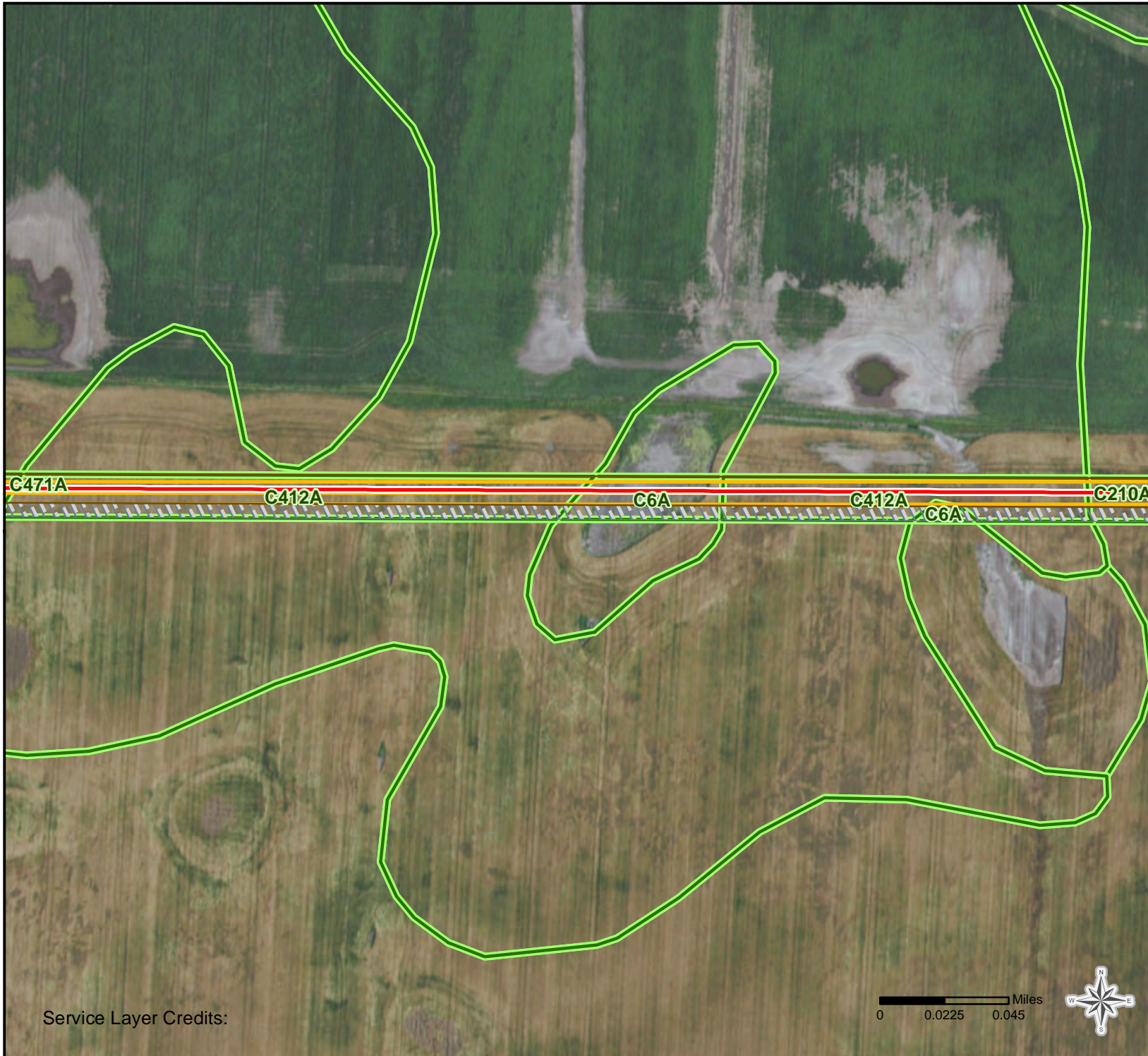
Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 12 of 25

Legend

-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  Soils



McLean County, ND

Source: NRCS 2019

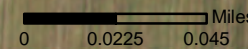
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PROJECT AREA OVERVIEW



Service Layer Credits:








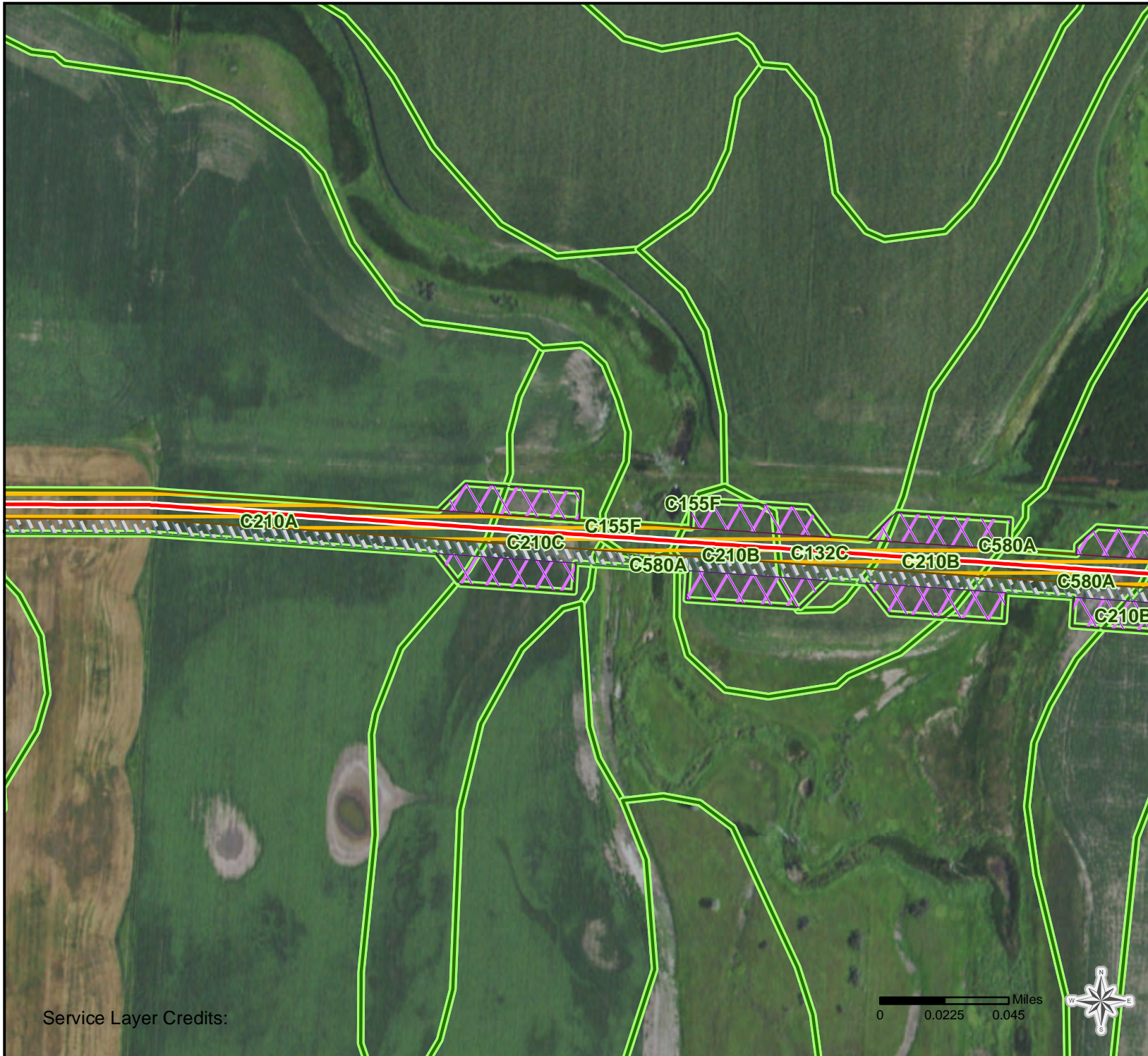
Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 13 of 25

Legend

-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  ATWS
-  Soils



McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

By: AB

Date:

1:3,000

- when Printed on 8X11







Revision Date: 9/23/2021

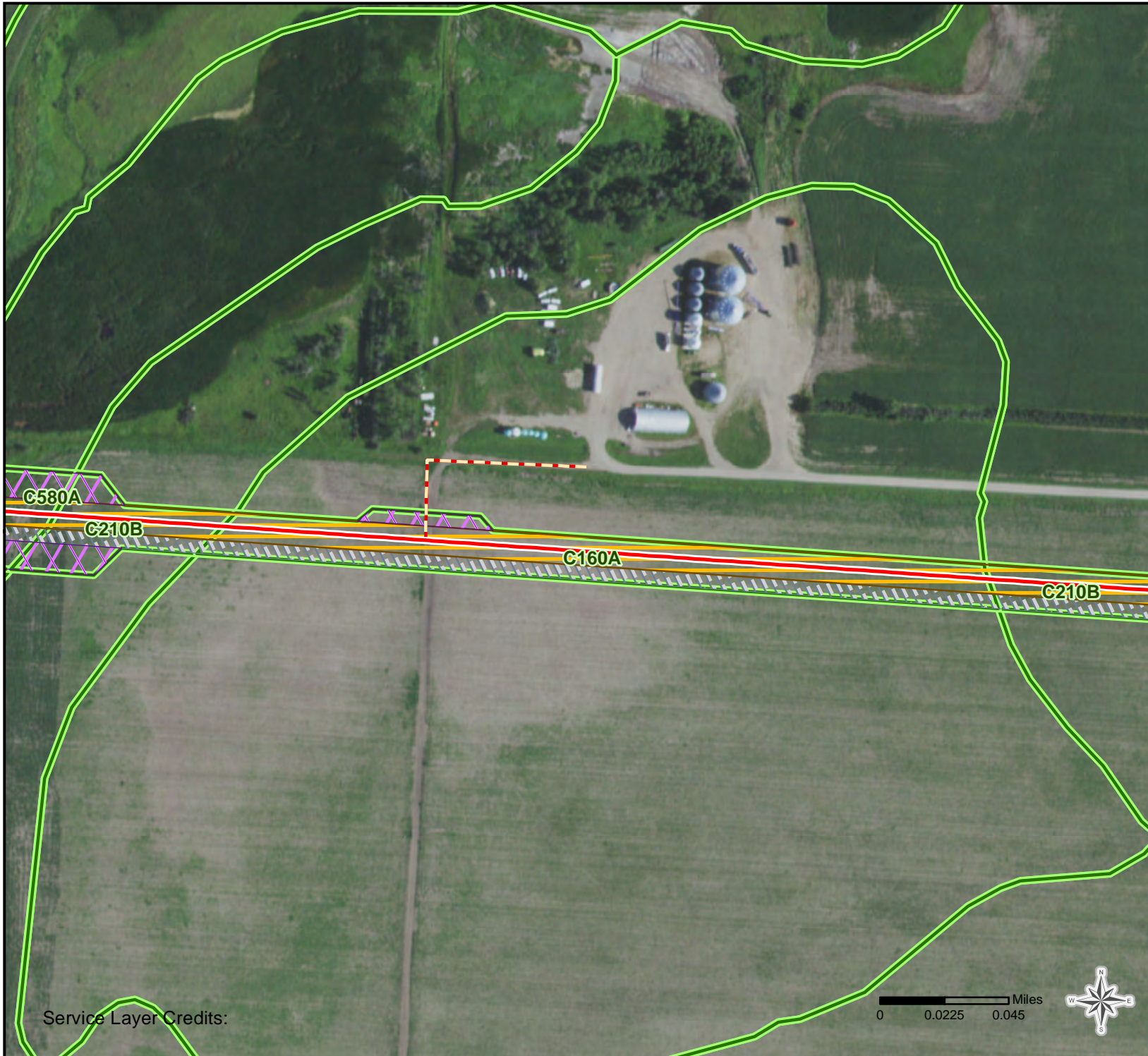
Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 14 of 25

Legend

-  Access Roads
-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  ATWS
-  Soils



Mclean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

0 0.0225 0.045 Miles











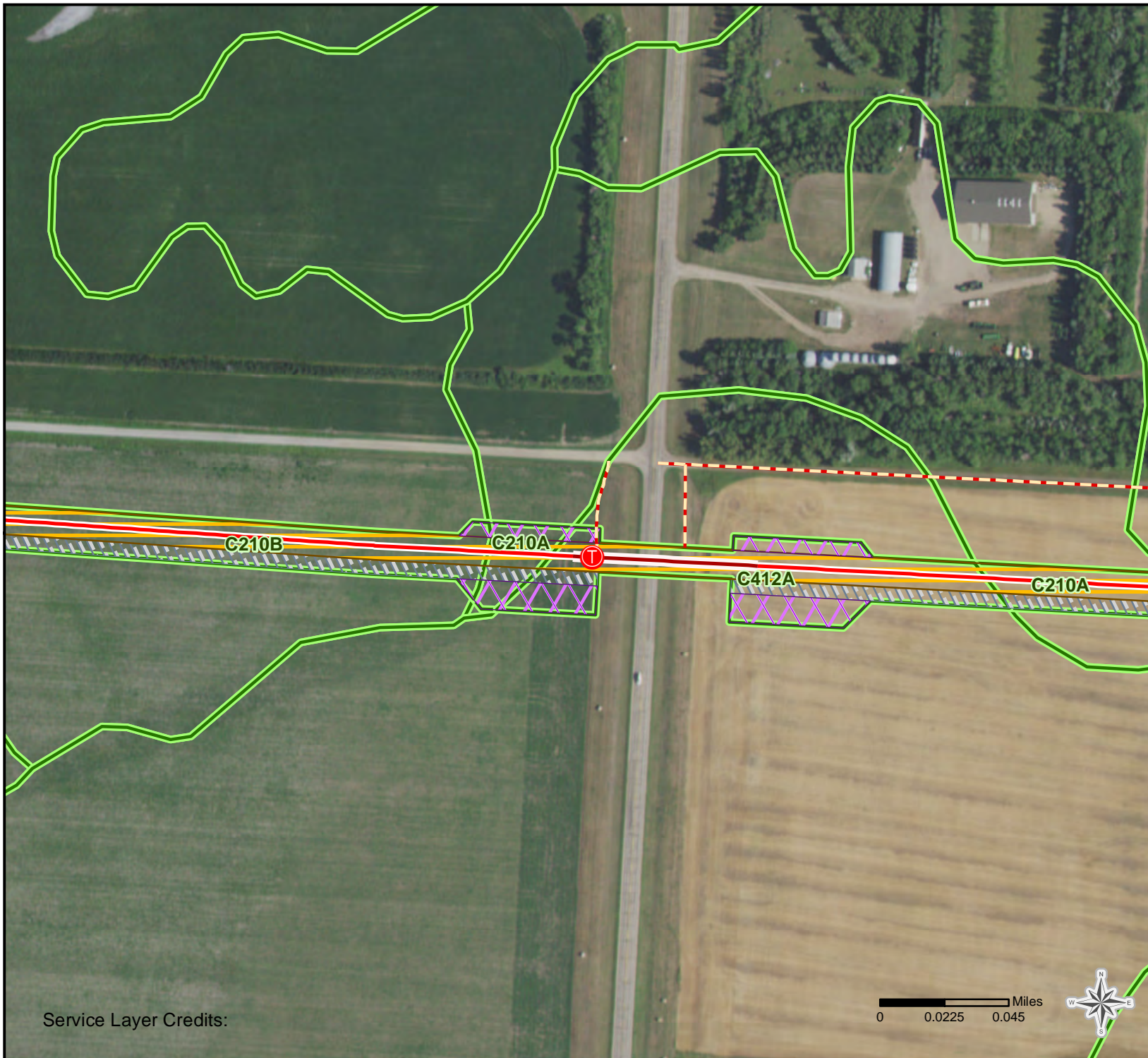
Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 15 of 25

Legend

-  Farm Taps
-  Access Roads
-  Proposed Bore
-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  ATWS
-  Soils



McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

0 0.0225 0.045 Miles



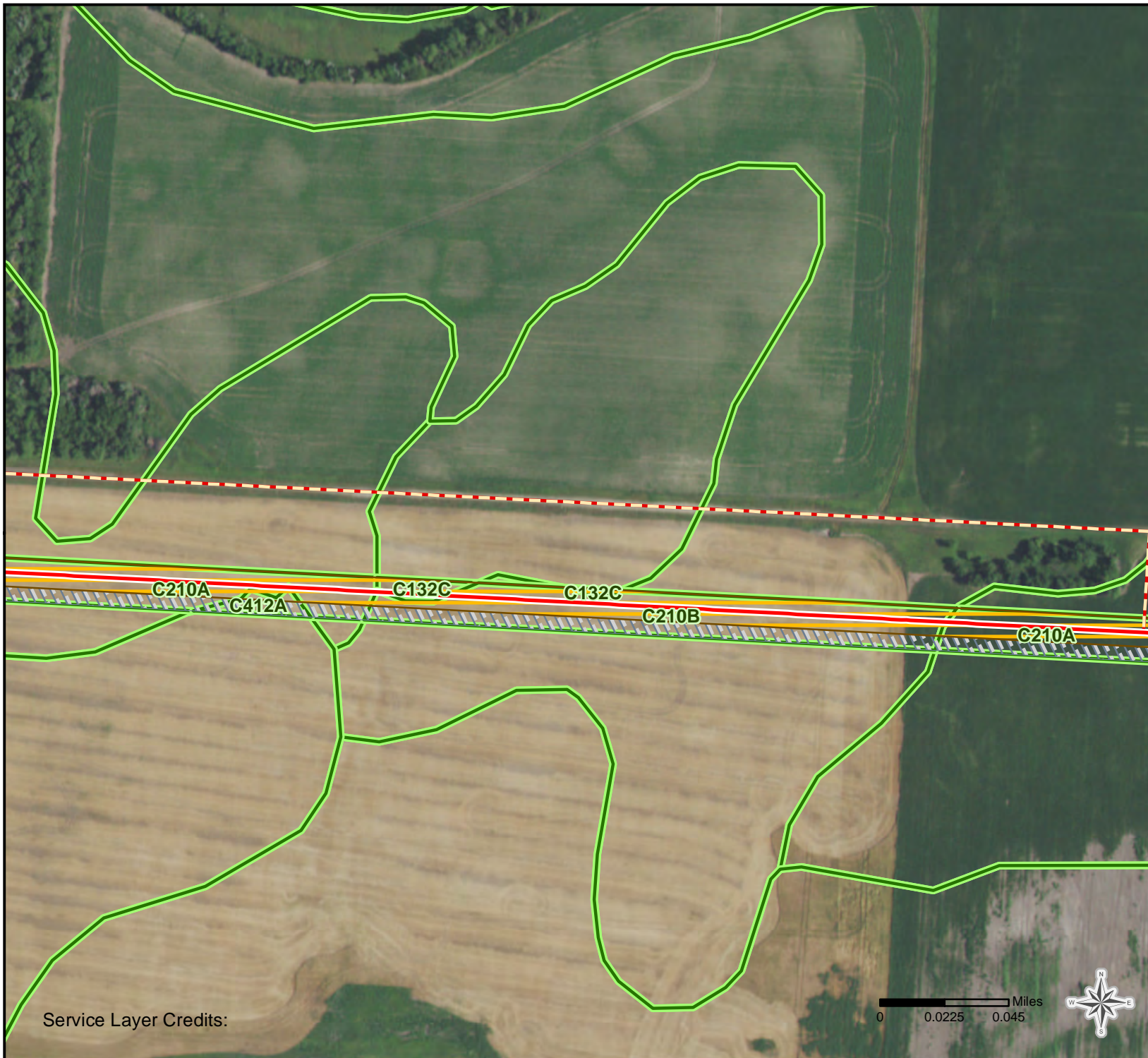
Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 16 of 25

Legend

- Access Roads
- Proposed Pipeline
- Permanent ROW
- TWS
- Soils



McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

0 0.0225 0.045 Miles








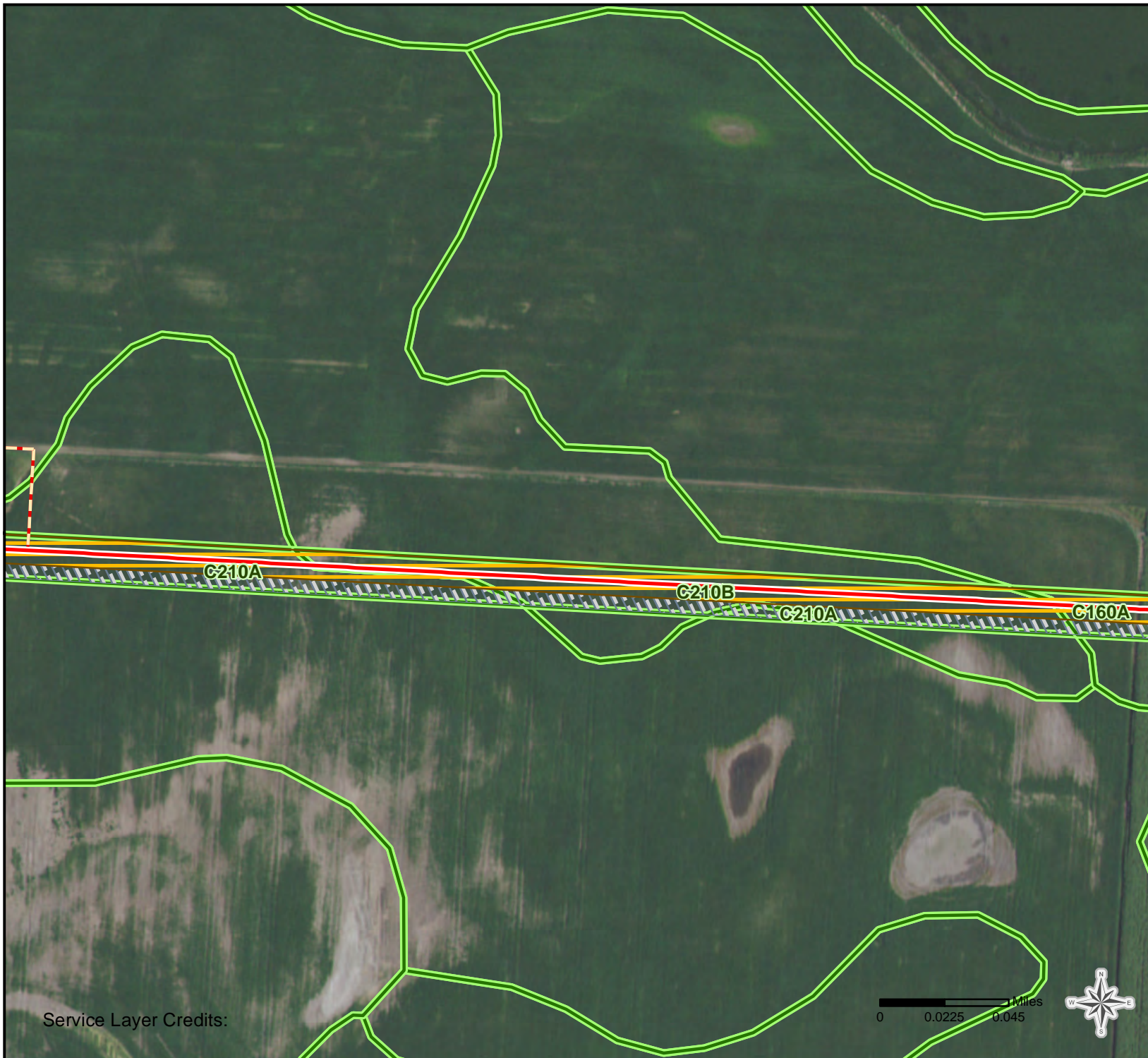
Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 17 of 25

Legend

-  Access Roads
-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  Soils



McLean County, ND

Source: NRCS 2019

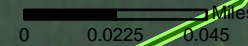
1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:







Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 18 of 25

Legend

-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  Soils

McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

By: AB

Date:

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- when Printed on 8X11







Revision Date: 9/23/2021

Line Section 7 Expansion Project

Figure 7.1-1 Soil Map
Units Overview

Exhibit 19 of 25

Legend

-  Access Roads
-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  ATWS
-  Soils

Mclean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



By: AB

Date:

1:3,000

- when Printed on 8X11









Revision Date: 9/23/2021

Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 20 of 25

Legend

-  Farm Taps
-  Access Roads
-  Proposed Bore
-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  ATWS
-  Soils

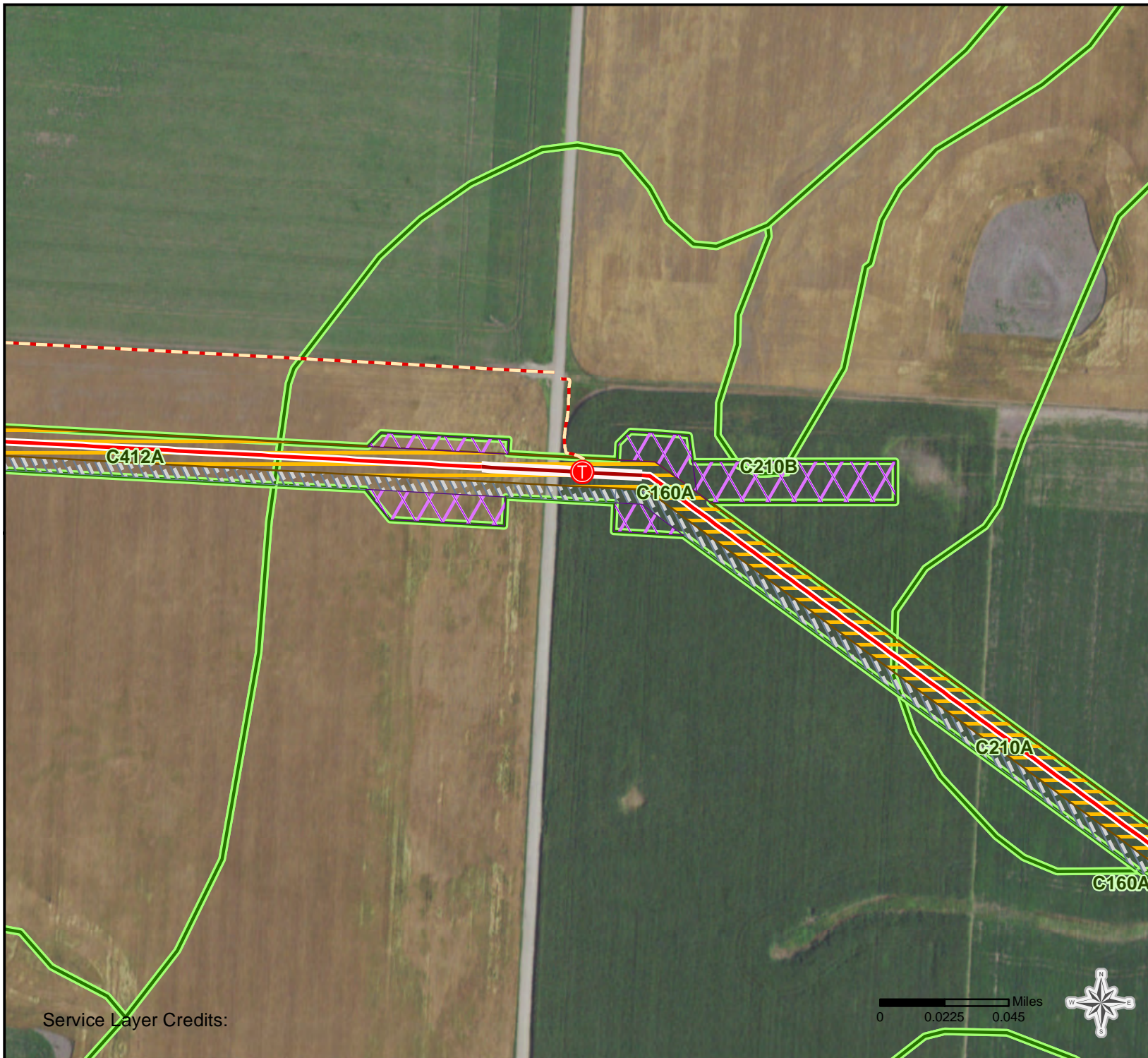
McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

By: AB

Date:

1:3,000

- when Printed on 8X11





Revision Date: 9/23/2021

Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 21 of 25

Legend

-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  Soils

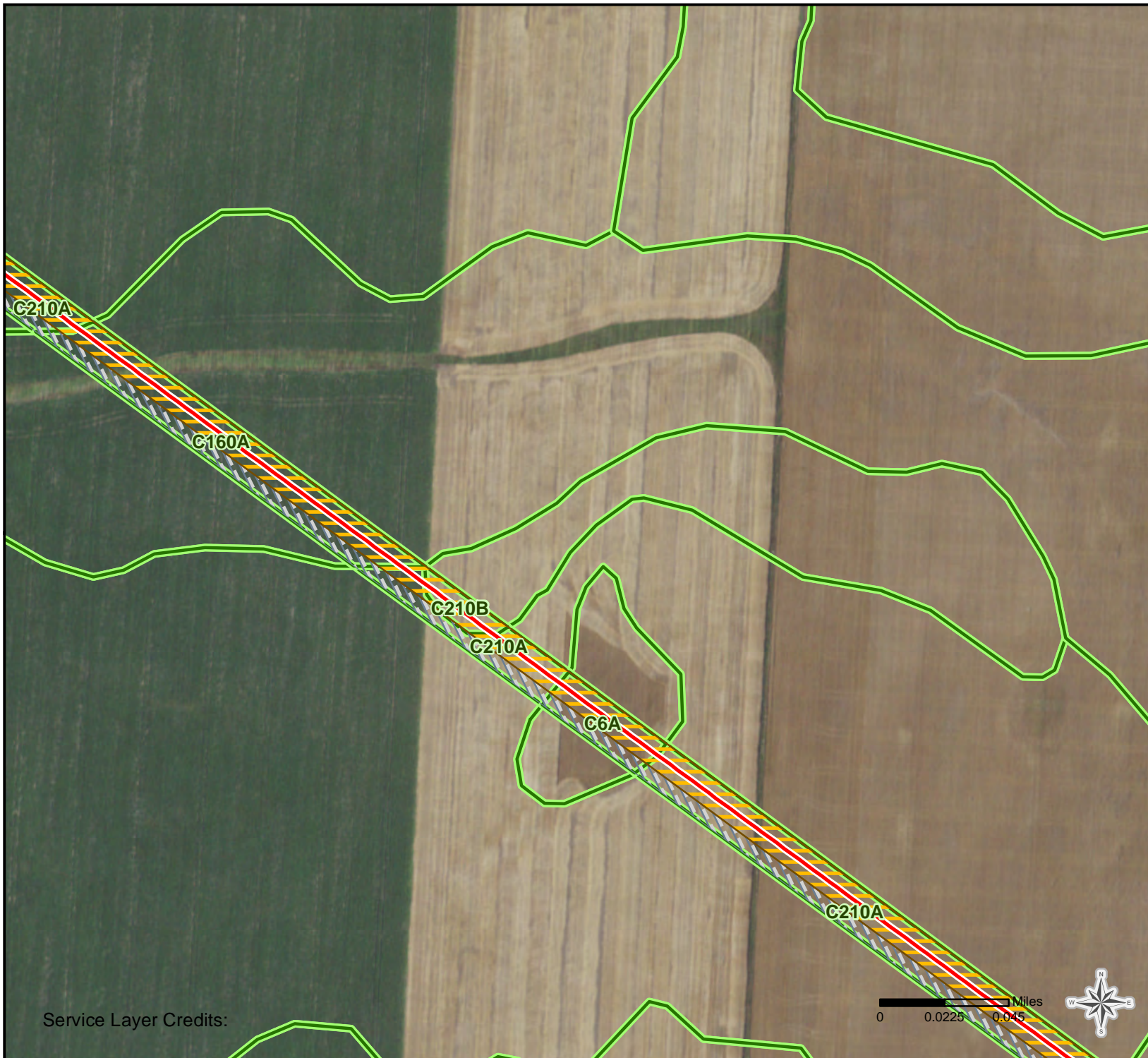
McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:







Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 22 of 25

Legend

-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  Soils

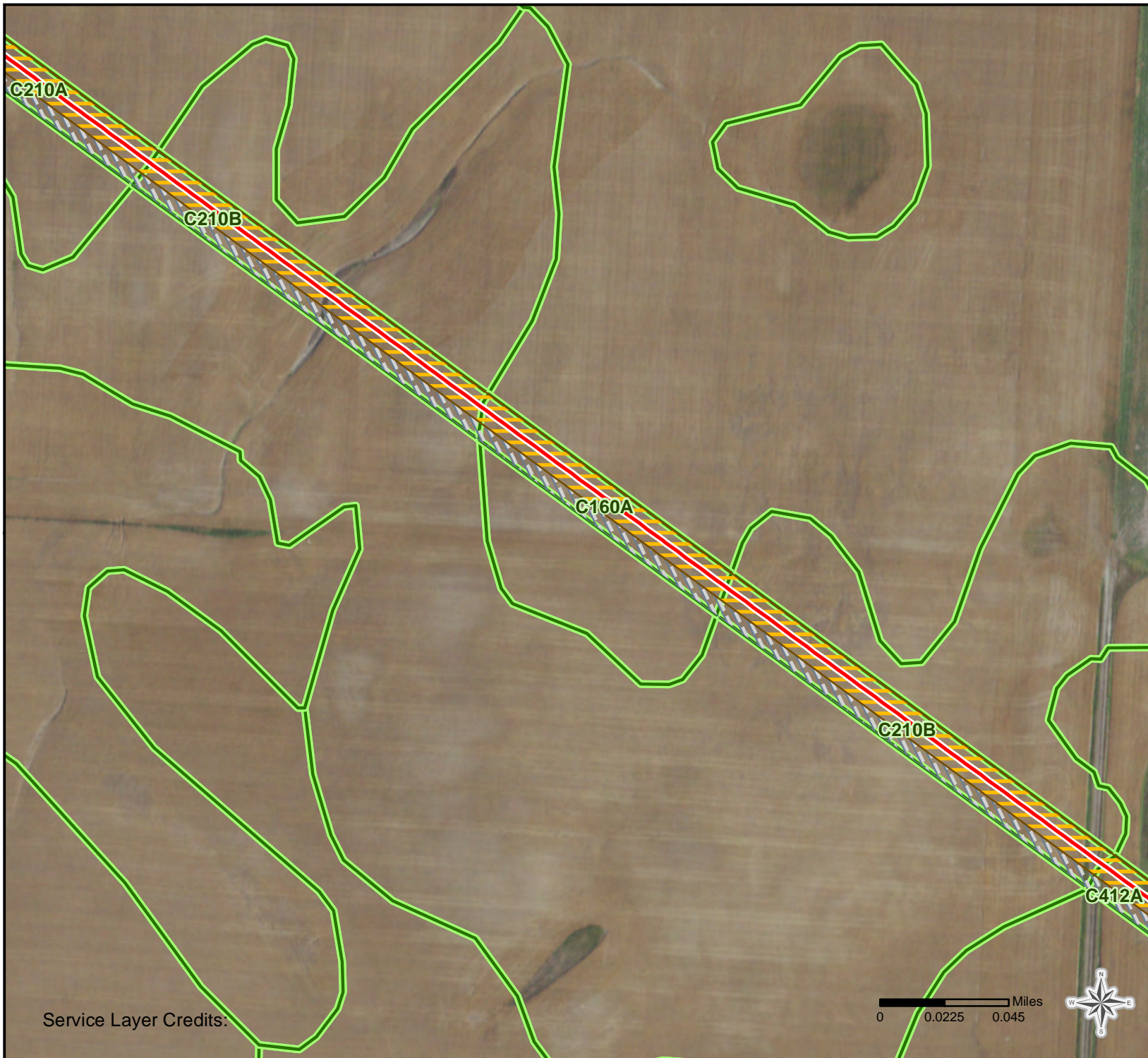
McLean County, ND

Source: NRCS 2019

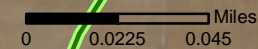
1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:







Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 23 of 25

Legend

-  Proposed Pipeline
-  Permanent ROW
-  TWS
-  Soils

McLean County, ND

Source: NRCS 2019

1 in = 250 ft



PROJECT AREA OVERVIEW



Service Layer Credits:

By: AB

Date:

1:3,000

- when Printed on 8X11









Revision Date: 9/23/2021

Line Section 7 Expansion Project

Figure 7.1-1 Soil Map Units Overview

Exhibit 24 of 25

Legend

-  Access Roads
-  Proposed Pipeline
-  Existing WBI Pipeline Centerline
-  Permanent ROW
-  TWS
-  ATWS
-  Above Ground Facilities
-  Soils

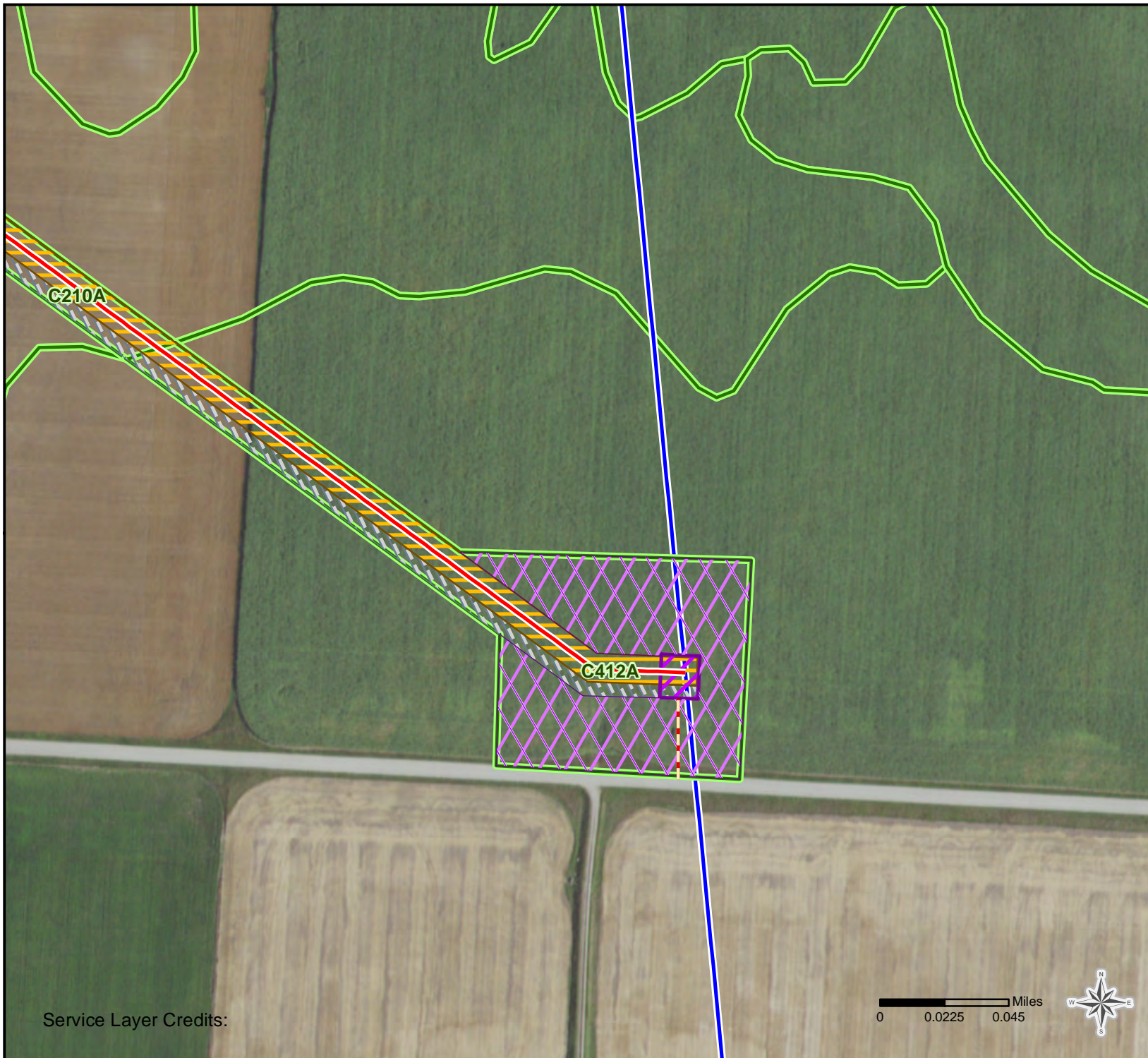
McLean County, ND

Source: NRCS 2019

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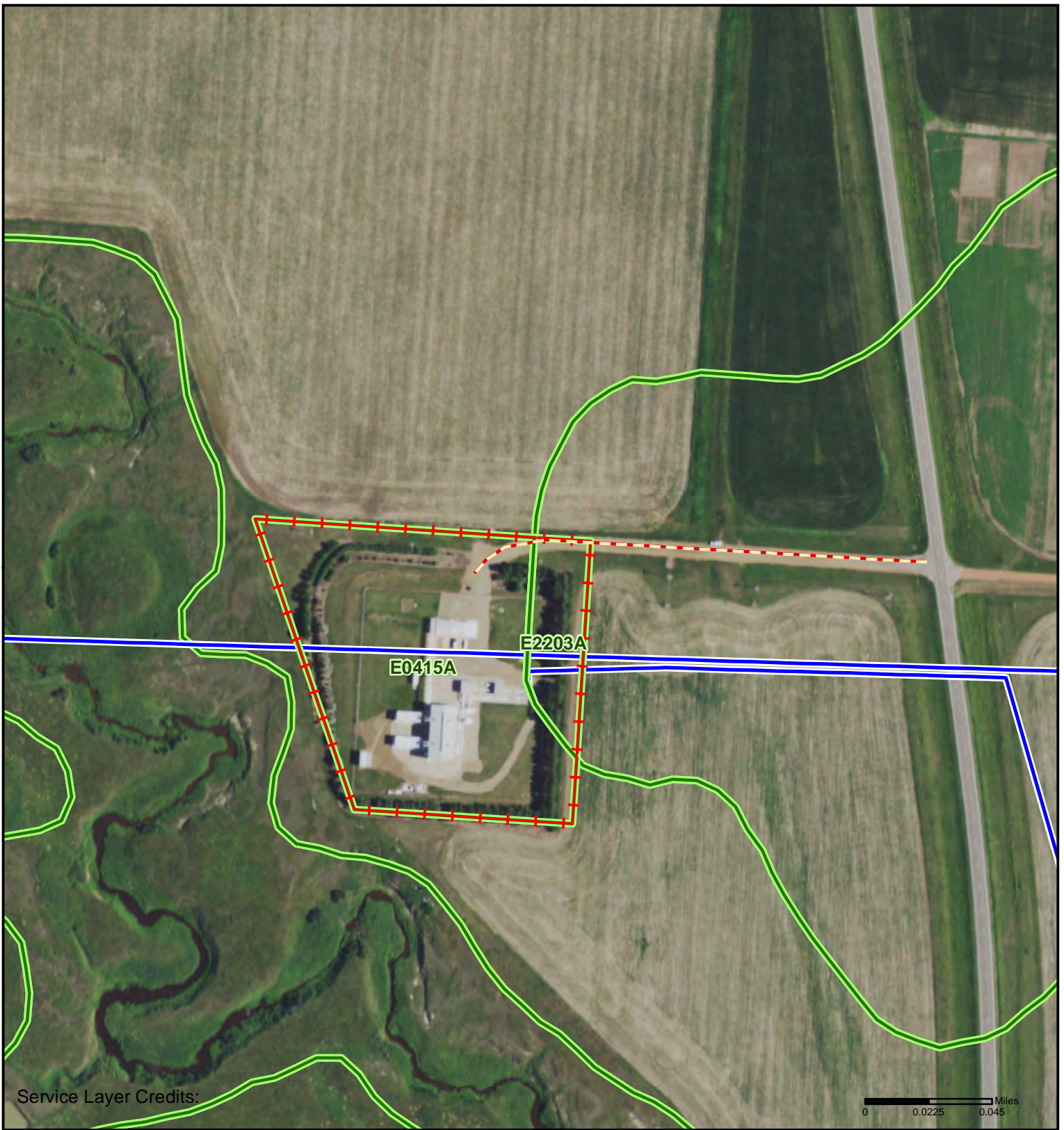
PROJECT AREA OVERVIEW



Service Layer Credits:

0 0.0225 0.045 Miles





Service Layer Credits:

0 0.0225 0.045 Miles

Line Section 7 Expansion Project

Figure 7.1-1 Soils Overview

Morton County

Exhibit 25 of 25

Source: NRCS 2014

PROJECT AREA OVERVIEW



1 in = 250 feet

Legend

- Access Roads
- Glen Ullin Tract
- Existing WBI Pipeline Centerline
- Soils



Glen Ullin